JUNE 22, 1959

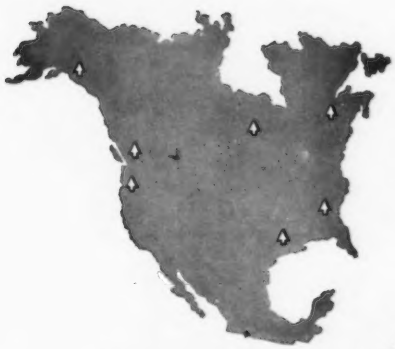
PAPER TRADE JOURNAL

Different Concept of Sheet Formation Described by Editor

"Royal Chinook" Plays Part in Modernization at Simpson

Seven Approaches to NSSC Recovery are Discussed

VIPS at Boston Tell Roving Editor the Coating Trends



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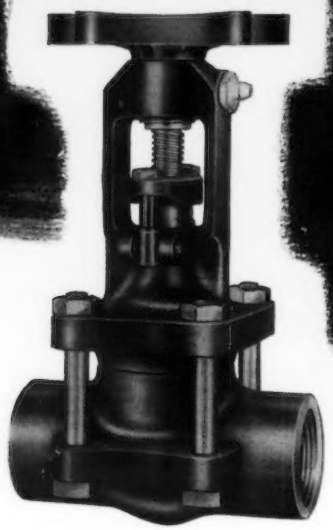

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PIPE·PAL fills the void in those applications where a more corrosion-resistant valve with greater thermal shock resistance has long been needed . . . applications where forged and cast steel have never fully met the need. OIC's advanced design makes full use of ductile iron's toughness, economy, and corrosion resistance.

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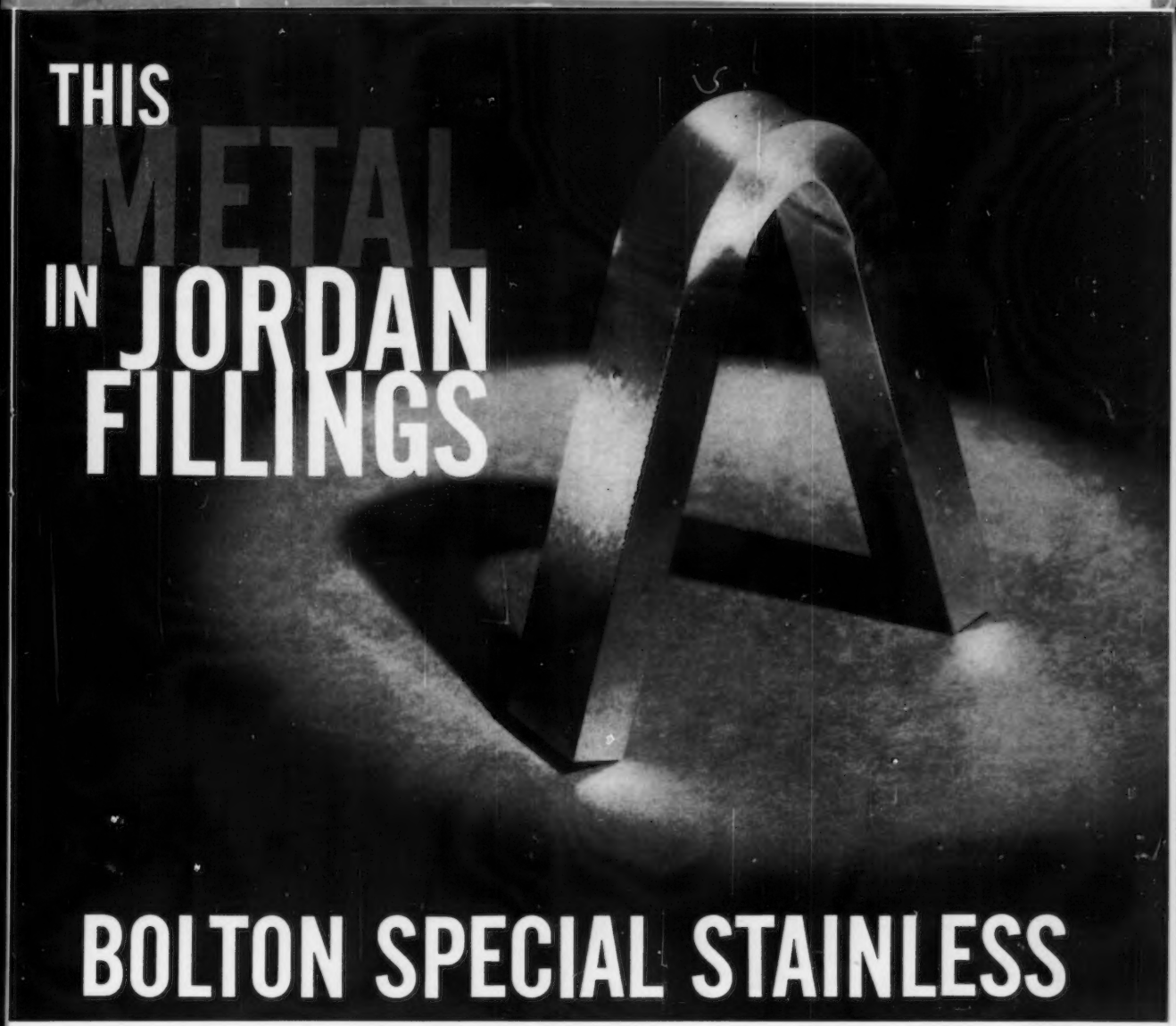

. . . means more to papermakers than any steel developed in two decades

Its unique properties provide: absolute resistance to corrosion from chemicals normally encountered in refining equipment — protection of the cutting edges against wear and abrasion — toughness to withstand deformation without fracture — and the capacity to resist severe shock.

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Brinell Hardness	Tensile Strength (Average Minimum)	% Elongation (2")	% Reduction of Area
321	180,200	16.4	74.2
363	199,300	14.5	41.9
415	211,700	14.0	32.1

Various heat treatments for differing mill applications

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BOLTON EMERSON
TRADE MARK

GRAYS HARBOR PULP, COSMOPOLIS, WASH.

Bird's Eye VIEW

The new Grays Harbor Mill, eighty miles south of Tacoma, converts timber into pulp in a continuous operation. From its 10-acre woodyard to finished pulp warehouse, the Grays Harbor operation is under the close supervision of Weyerhaeuser research people who are constantly on the lookout for improved pulping methods.

WEYERHAEUSER

PAPER TRADE JOURNAL

PUBLISHED WEEKLY SINCE 1872

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REMEMBER THESE DATES

September 9-11. TAPPI Fundamental Research Conference, Institute of Paper Chemistry, Appleton, Wis.

September 21-23. Paper-Plastics Conference, Edgewater Beach Hotel, Chicago, Ill.

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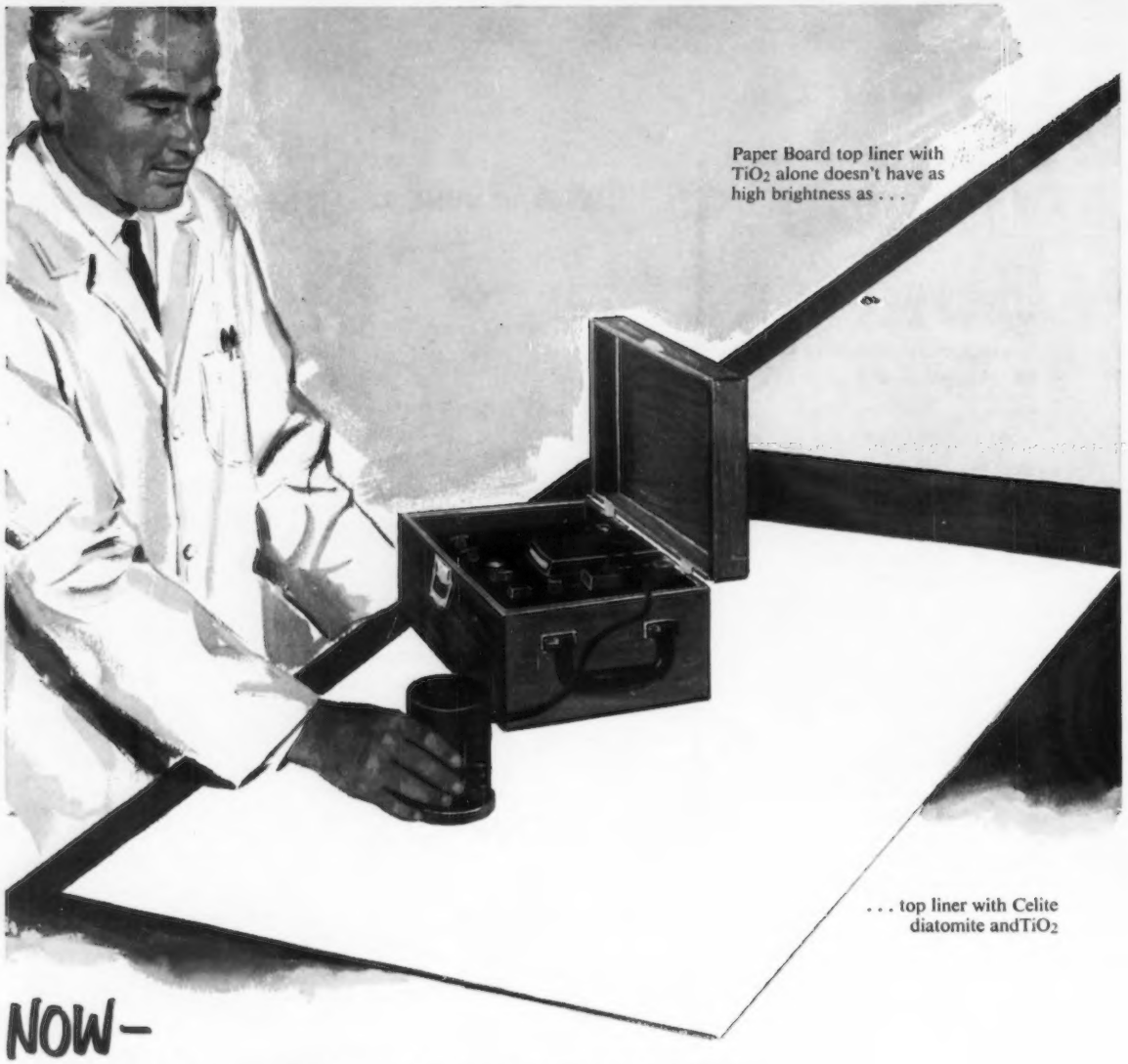

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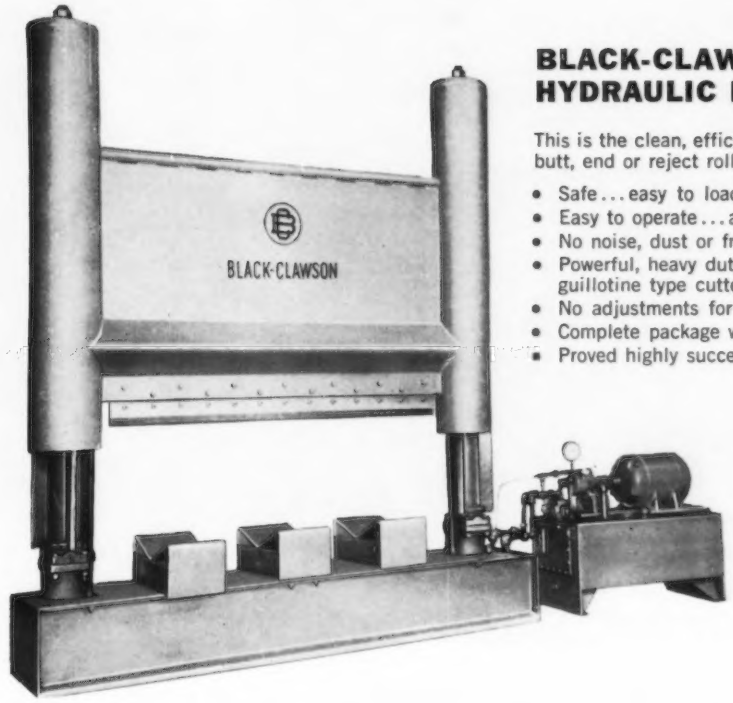
*Celite is Johns-Manville's registered trade mark for its diatomaceous silica products

(Photovolt Reflection Meter courtesy of Testing Machines, Inc.)

Celite has many paper production advantages:
- Controls Pitch
- Increases Opacity
- Reduces Pigment Costs
- Speeds Board Production

JOHNS-MANVILLE

How to Split Rolls with Ease and Speed



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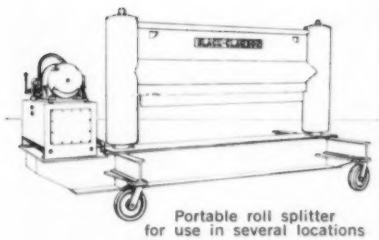
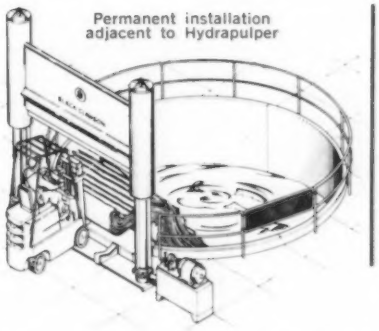
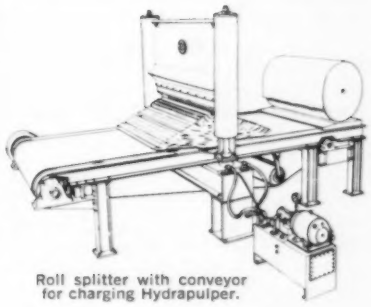


Portable roll splitter for use in several locations



Permanent installation adjacent to Hydrapulper



Roll splitter with conveyor for charging Hydrapulper.

SHARTLE DIVISION STOCK PREPARATION EQUIPMENT

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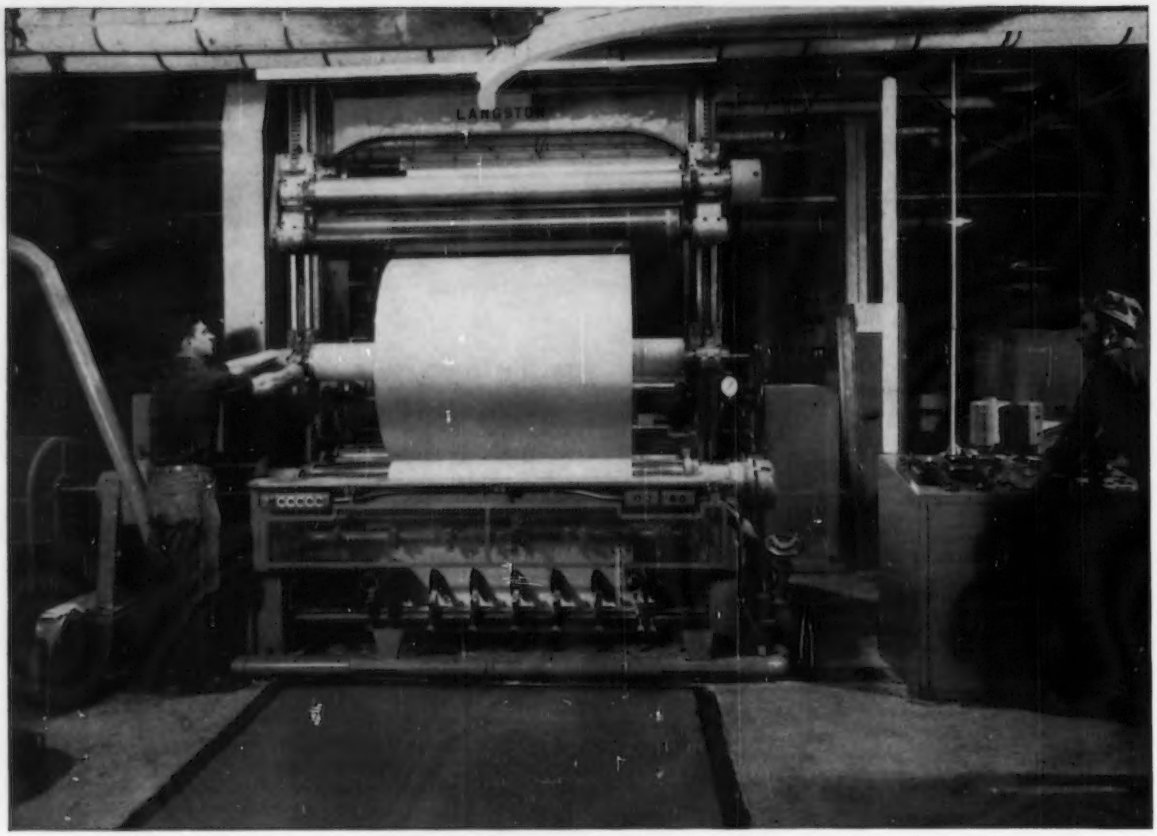


New 72-inch Type CA Langston Slitter and Winder in Marathon Corporation finishing room handles rolls up to 60 in. in diameter at speeds up to 1500 ft. per minute. Finished rolls are lowered by hydraulic drop shown in foreground.

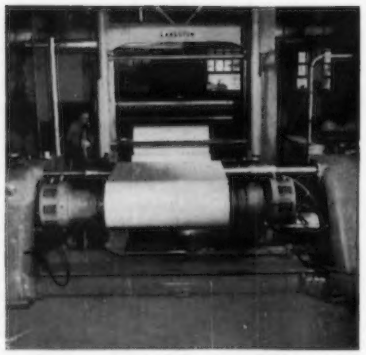
New Langston Slitter and Winder helps Marathon cut operating costs

This new Langston Slitter and Winder installation at Marathon Corporation's Rothschild, Wis., mill is already helping the company cut costs and speed processing of quality paper and board.

For example, the power-operated shaftless unwind stand virtually loads itself. No crew is needed to bull heavy shafts into place. And the Langston hydraulic roll ejector permits 1-man removal of finished rolls. These two features alone are saving Marathon several thousand dollars a year. Water-cooled Wichita-type air brakes can be operated from control console.

Besides effecting major operating economies, these Langston machines also pay off in higher quality rolls. The hydraulic rider roll control, for instance, automatically keeps nip pressure constant, regardless of the diameter or weight of the rewound roll. This insures rolls of uniform density with reduced tendency toward wrinkling or telescoping. The shear-cut slitters cut like scissors instead of a knife, shearing cleanly and keeping paper dust to a minimum. The resulting clean-edged, dustfree rolls are easier for customers to process.

Learn how you can benefit from the advantages of Langston Slitters & Winders. Write SAMUEL M. LANGSTON CO., 6th & Jefferson Sts., Camden 4, N.J.



Langston Shaftless Unwind Stand eliminates the time-consuming, back-breaking task of hoisting heavy shafts into place. The hydraulically actuated arms reach out, pick up the roll and lift it to running position—a 1-man, push-button operation.

LANGSTON Leadership...by design

Trends

Industrial Production Sets New Record in May

Industrial production established a new record high in May according to the Federal Reserve Board. Gains in durable goods output were widespread, marked increases were noted for farm machinery, motor trucks and industrial equipment. The Reserve Board's index of mine, mill and factory production in May was 152% of the 1947-49 base figure. This was 2 points above April and compares with 146% for the pre-recession high (February, 1957) and recession low of 126% (April 1958).

April Paper and Board Showed Big Increases

Paper and board production during April amounted to 2,911,915 tons according to a Bureau of Census report just released. This was 17% above the production in April, 1958. Paper output in April at 1,270,360 tons was 12% above the production of a year ago, while paperboard at 1,340,690 tons was up 21% over the same month last year.

Price Rise for Many Paper Grades

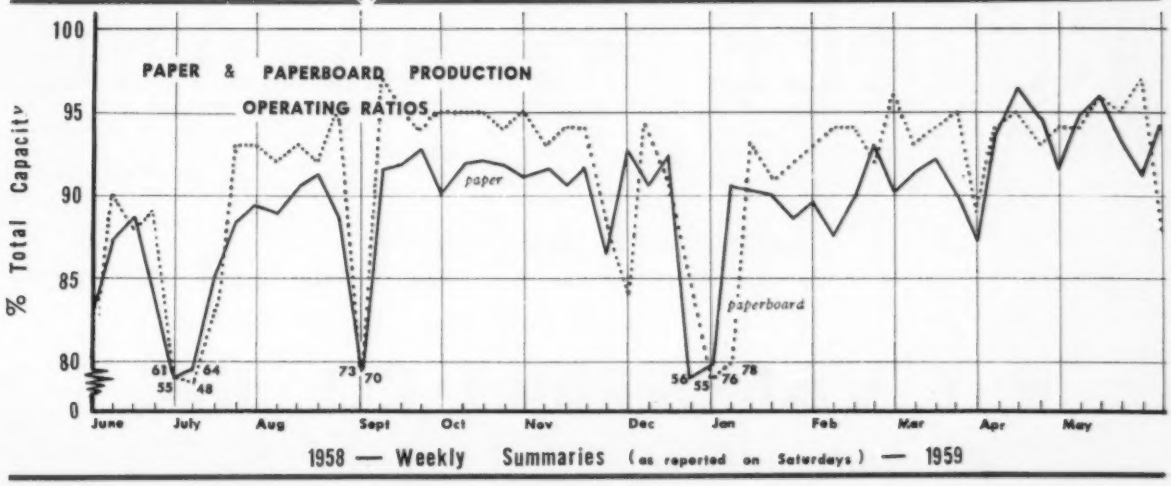
Price increases have recently been announced for many grades of paper. The increase in most cases has amounted to about $10 per ton. Exceptions have been newsprint, groundwood printing papers and rag content papers for which no increases have been reported.

Pulp Price Outlook: No Change

Prospects for a pulp price change are nil. Although official announcements have not yet been made for the third quarter, pulp marketing experts predict prices will be unchanged. Although an increase for all grades would be justified on the basis of rising mill costs, present over-supply of market pulp would make it inadvisable.

Waste Paper Consumption Gaining

Only fiber furnish for paper and board manufacture to show an increase in 1958 was waste paper consumption which rose 2%, while paper and board output rose only 0.4%. The percentage of fiber furnish derived from waste paper in 1958 rose from 26.5 to 26.9% Consumption of waste paper in the first quarter of this year was 10% ahead of same period in 1958.



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Mr. Currie joined the E. B. Eddy

PJT PAPER TRADE JOURNAL

WEEK OF JUNE 22, 1959

Halifax Starts Up New Machine

Halifax Paper Co's new No. 4 paper machine, "The Dixie Queen," began operations on June 11th.

During the first day of operation, production was concentrated on kraft grocery paper, to be converted by independent manufacturers into bags.

The construction of the new 246-foot Beloit machine was first announced by Mr. Adams last July. Ground was broken in August. The 10-month construction project directed by the Rust Engineering Co., of Pittsburgh, Pa., is one of the shortest on record for the installation of a machine of this type.

Continental Can acquires Fort Wayne, Sells Box Plants

Continental Can Co. acquired Fort Wayne Corrugated Paper Co. on June 15th, then promptly sold three of Fort Wayne's four corrugated box plants to another company.

St. Joe Paper Co. has purchased Fort Wayne's plants in Hartford City, Ind., Rochester, N. Y., and Pittsburgh from Continental and will continue their operation. Continental, which already had 16 corrugated plants prior to the merger, will continue to operate the fourth Fort Wayne corrugated box plant at Chicago, extending its corrugated service to Illinois, Wisconsin and Iowa.

The merger involved an exchange of 496,000 shares of Continental common stock for Fort Wayne stock on the basis of 0.765654 shares of Continental for each share of Fort Wayne common.

Incident to the merger, Continental will also take over the merged company's 40 per cent interest in Southern Paperboard Corp., in which it had previously owned a 60 per cent controlling interest.

Production Begins at St. Francisville

St. Francisville Paper Co. is commencing operation of its on-machine double coating process. This mill is unique in that it employs two-side roll coaters in conjunction with double trailing blade coaters that are installed in-line with a Beloit high-speed paper machine. Full scale operation is anticipated within the next month.

Construction of the new mill, which is located southwest of St. Francisville and near the Mississippi River, began in 1957. The main mill building has a pre-cast concrete skin and light-weight precast roof panels on a structual steel frame. The sheet finishing building is made entirely of pre-cast concrete.

Crown Zellerbach and Time, Inc. jointly own St. Francisville Paper Co. Time will absorb part of the production while C-Z's sales organization will market the remainder.

Argentina Pulp and Paper Project Studied

A $13 million plant to produce pulp and paper from bagasse may soon be built in Argentina. Parsons and Whittemore, Inc., has made a technical study of this project for Argentina's Ledesma sugar interests. A report will soon be made to Ledesma.

Ledesma has offered to invest $11 million in the construction of a mill at Jujuy, Salta, to produce pulp and paper from bagasse. The plant would have an initial annual production of 36,500 tons of writing and printing paper.

Plans Indefinite for New Paper Mill at De Ridder

Crown Zellerbach Corp., still plans a new kraft paper mill on its large acreage in De Ridder, La., but plans are indefinite.

A. B. Layton, the company's finance chairman, said no date for the paper mill will be set until market conditions justify increased production of kraft papers.

G-P Lets Contract for New Paper Machine

The contract to build and install No. 2 paper machine as part of Georgia-Pacific Paper Co.'s recently announced expansion (see PTJ, 4/25/59) at Toledo, Ore., has been awarded to Black Clawson Co. Its cost has been reported to be in the $2 million bracket.

The 175-inch fourdrinier machine will be designed to produce 250 tons daily of 30-pound kraft bag paper to 100-pound gumming tape and tar wrap. The dryer section will consist of 53 units. Paper produced will be in rolls of 96 inches in diameter and

Paper and Board Production

According to the American Paper and Pulp Ass'n., the ratio of the United States production to mill capacity for the week ending June 6, 1959, was 94.1 per cent compared with 92.4 per cent revised for the preceding week. The ratio was 82.2 per cent for the corresponding week a year ago.

The paperboard production ratio for the week ending June 6, 1959, was 88 per cent compared with 97 per cent for the preceding week and 77 per cent for the corresponding week a year ago.

(Detailed statistics on page 46.)

A CERTIFICATE OF APPRECIATION was awarded to Fraser Paper Ltd., at Madawaska, Me., by the Maine Civil Defense and Public Safety Agency for the company's service to the Maine civil defense program. Claude U. Bishop, civil defense coordinator for the northern area of Aroostock County, presented the certificate to Aubrey Crabtree, Fraser president. P. E. Sargent, Houlton, Aroostock County director of civil defense, and J. W. D. Hierlihy, manager of Fraser's paper mills, were present. Shown above (left to right) are Messrs. Bishop, Crabtree, Hierlihy and Sargent.

up to 165 inches in width.

Number 2 will be placed No. 1, a 262-inch B-C Hydroflyte fourdrinier machine, built in 1957 and now the largest kraft paper machine on the West Coast.

The new machine will be built in B-C's Watertown, N. Y., division and shipped to Oregon in sections. It is expected that No. 2 will be in production by mid-1960.

Celgar Announces Engineering Schedules

The steel contract for the woodroom at Celgar Limited's new mill, at Castlegar, has been let to Western Bridge, Celgar has announced. Celgar will install Ranney wells to deliver a minimum supply of 40 million gallons per day. Testing is beginning immediately and if successful, work will proceed to completion in the estimated time of 8 months.

Celgar has also announced its construction and engineering schedules. During 1959 all engineering work will be completed on the woodroom, log and refuse handling, and the chip handling. The chip silos will be completed and a start made on the conveyor foundations.

The woodroom and chip handling will be in operation about October 1960 in order to stockpile chips for spring operation in 1961. To meet this production, the steam plant must also be operative together with the booming grounds, mill water supply, and effluent disposal. The pulp mill drying machine and finishing building will continue under construction into 1961.

Celgar will produce a bleached kraft paper pulp for the North American market.

Currie Named Manager Weyerhaeuser Pulp Div.

Howard W. Morgan, vice president, pulp, paperboard and container group, of the Weyerhaeuser Timber

Derek Currie

Co. announced the appointment of Derek Currie as manager of the pulp division of the company, a position formerly held by Mr. Morgan. As manager of the division, Mr. Currie will be responsible for all production, sales, engineering, and research for the division.

Mr. Currie was formerly vice president and general manager of Eastern Fine Paper & Pulp Division of Standard Packaging Corp. He was born and educated in Britain where he also received his early training in the paper industry.

Mr. Currie joined the E. B. Eddy Co., Hull, Canada, in 1946 where he took an active part in the integration and modernization of the Eddy and Booth mills. He became manager of manufacturing in 1950 and was subsequently appointed vice president of manufacturing and a director of the company. In 1957 he joined the Eastern Corp.

Valsetz Votes to Merge With Boise Cascade

The boards of directors of the Valsetz Lumber Co., Portland, and its affiliate, Herbert A. Templeton Lumber Co., Spokane, have voted to merge with the Boise Cascade Corp.

The merger, to become effective if approved by Boise Cascade stockholders, would come through a stock exchange. Valsetz and Templeton would become subsidiaries of the Idaho firm.

Valsetz operates sawmills at La Grande, Elgin, Enterprise and Joseph in Oregon and at Lincoln in Washington; a millwork factory at Spokane; and a new plywood mill at Valsetz. Its timber operations have centered in the Northeastern Oregon pine region since the Valsetz, Ore., sawmill closed in 1957. The firm recently bought the Mt. Emily Lumber Co., the Heppner Lumber Co. and several others.

Boise Cascade operations spread through Washington and Southern Idaho, include a chain of retail building material outlets, a new pulp and paper mill at Wallula, Wash., and container plants at Burley, Idaho and Wallula.

Western Kraft Buys Container Plants

Purchase of Western Corrugated, Inc., with corrugated container plants at Beaverton and Wenatchee, Wash., was announced by Ira C. Keller, president of Western Kraft Corp., the purchaser.

Western Corrugated's president, Roy F. Fefley, San Leandro, Calif., was named a vice president of Western Kraft. Mr. Fefley retains his position as a member of Western Kraft's board of directors. There are no other changes in officers or management.

Western Corrugated becomes an operating division of Western Kraft Corp. Western Kraft properties now include a 250-ton-per-day kraft linerboard mill at Albany; a 30,000-acre tree farm near Marcola; and corrugated box manufacturing plants at Los Angeles, Beaverton and Wenatchee.

PJT NEWS OF CONVERTERS

H. G. Nelson

G. B. Clark

O-I Glass Container Div. Promotes Two

Henry G. Nelson, quality supervisor of the Shipping Container Research Laboratory of the Glass Container Division of Owens-Illinois Glass Co., has been named coordinator of quality control for the company's Paper Products Division.

Mr. Nelson's promotion was announced by John G. Turk, technical director of the recently established Research, Product Development and Standards Laboratory of the Paper Products Division. Guy B. Clark will succeed Mr. Nelson as quality supervisor.

Mr. Nelson is active on several committees of the Technical Association of Pulp and Paper Industries and is currently heading a special study on "flat crush" of corrugated board. He has more than 27 years experience in the corrugated packaging operations at O-I, serving in Alton, Ill., and Charleston, W. Va., before moving to Toledo 10 years ago.

Mr. Clark has served as supervisor of O-I carton testing laboratory since he joined the company in 1953 and will continue with those responsibilities in addition to his new duties. He is active in the American Society for Testing Materials and is heading a society subcommittee in a special study of "incline impact testing" of corrugated packages.

Marathon Announces Executive Promotions

Assignment of Donald A. Snyder, Menasha, as vice president and assistant general manager of the Marathon Division of American Can Co. was announced.

In designating Mr. Snyder as the senior executive on his administrative staff, Roy J. Sund, Marathon's vice president and general manager, pointed out that activities of the food packaging division, specialty packaging division, and Marathon Packages, Ltd., Toronto, will be under Mr. Snyder's jurisdiction.

Also announced was the appointment of Emmett W. Below, Menasha, as vice president of the food packaging division, succeeding Mr. Snyder. Alden H. Christianson, Neenah, controller, will head the accounting division, replacing Mr. Below as Marathon's chief accounting executive.

In conjunction with these promotions, Mr. Sund announced that vice president, Leo E. Croy, Neenah, scheduled to reire at the end of this year, will continue in an active role on special assignments which will enable "our management group to take full advantage of his 36 years of Marathon management and industry background and experience."

General packaging sales will become a function of the specialty packaging division headed by vice president Palmer B. McConnell, Neenah.

Group Purchases Royal Stationery

A group headed by Paul J. Sundberg, Sr., retired vice president of Brown & Bigelow, has purchased the Royal Stationery Co., Minneapolis. The 32-year-old firm was sold by Wayne W. Winterburn and Carol E. Turner for several hundred thousand dollars."

Mr. Sundberg was elected president and chairman of the board of Royal by the new owners. His two sons, Paul J., Jr., and James V. Sundberg, were named vice presidents and sales managers. They had been district sales managers for Brown & Bigelow.

John Bennett, Royal plant manager, was elected vice president in charge of manufacturing.

Hanlon Made Gen. Mgr. Of St. Louis Plant

The appointment of Donald Hanlon as general manager of the St. Louis plant of Sefton Fibre Can Co., a division of Container Corporation of America. has been announced.

Mr. Hanlon joined Sefton in 1947 at St. Louis and was transferred to the New Orleans branch in 1952 as plant manager. He served as general manager from 1953 to 1957 and was then appointed director of production methods for all Sefton plants.

Southern Container Plans To Build Miss. Plant

Southern Container Corp. will build a plant at Houston, Miss., for making corrugated boxes if voters of the area approve a $750,000 industrial bond issue to finance construction of a building for the plant.

Warren Hood, of Jackson, is president of Southern Container and Arthur C. Stringer, also of Jackson, is vice president.

Three Board and Box Mfrs. Approve Merger Plans

Approval of merger plans for three board and box manufacturers has been announced by the boards of directors of the companies. The merger involves Ohio Box Board Co. of Rittman, Ohio; Central Fiber Products Co., Quincy, Ill., and American Box Board Co., Grand Rapids, Mich.

Plans of the long considered merger will be submitted to stockholders for approval at meetings which probably will be held in July.

PAPER PEOPLE

W. W. Holland

Holland Named V-P Nova Scotia Pulp

Walter W. Holland has been appointed vice president and general manager of Nova Scotia Pulp Limited.

Mr. Holland comes to the company with a broad background of experience in the industry, having been actively engaged in research, construction, operation and management. This includes his association with the Pulp and Paper Research Institute of Canada followed by some 25 years in the industry, having been general superintendent of the Quebec North Shore Paper Co. mill at Baie Comeau, Quebec, and mill manager of the Oxford Paper Co. at Rumford, Me. In 1955 he became vice president, in charge of the pulp division, for British Columbia Forest Products Limited, and was directly responsible for the Crofton mill project during the engineering, construction and operating stages.

Riegel Paper Promotes Four at Carolina Mill

Riegel Paper Corp. has announced four personnel changes in its Carolina Division at Riegelwood, N. C.

Thomas R. Johnson was promoted to quality control supervisor. Hyton Babson was named assistant quality control supervisor.

Joseph B. Callan was promoted to finishing and shipping superintendent. Russell J. Carpenter was named assistant finishing and shipping superintendent.

McCarty Joins St. Regis

St. Regis Paper Co. announces the appointment of Eugene F. McCarty as special technical representative in the company's central technical department in Carthage, N. Y. He will report to Jack E. Wilber, director of technical services.

Mr. McCarty will represent the department in all matters concerned with the manufacture, conversion, and commercial application of extensible papers.

Before joining St. Regis, Mr. McCarty was a staff engineer with West Virginia Pulp and Paper Co. He has also held positions with Minnesota & Ontario Paper Co., Penick & Ford, Ltd., Nekoosa Edwards Paper Co., and Bemis Brothers Bag. Co. He has both a bachelor's and a master's degree from the University of Minnesota.

Abitibi Power Announces Executive Reorganization

D. W. Ambridge, president, Abitibi Power & Paper Co., Ltd., in relinquishing the general managership of the company, announces the following reorganization of executive responsibilities, effective June 11, 1959:

R. J. Askin, executive vice president (development, engineering and services);

P. E. Roberts, executive vice president (operations).

Mr. Ambridge has delegated his former duties as general manager apart from sales and finance, to Mr. Askin and Mr. Roberts.

Breeland Joins Clupak

Fred S. Breeland has joined Clupak, Inc., as the company's first field engineer.

Mr. Breeland will travel extensively both in the United States and Canada to advise and assist Clupak licensees in the start-up of their Clupak paper production and to render continuing technical service after start-up, as provided in Clupak's contract with each licensee. Moreover, Mr. Breeland will be concerned with inspecting the products of Clupak licensees to see that the high quality standards of the Clupak trademark are fully maintained.

Before joining Clupak, Inc., Mr. Breeland was for 7 years with West Virginia Pulp and Paper Co. in its Charleston,, S. C., plant where he served in the engineering department.

P. H. Glatfelter

Glatfelter Awarded Degree From Lawrence College

Philip H. Glatfelter, chairman of the board of directors at Glatfelter Paper Co., Spring Grove, Pa., was awarded an honorary doctor of law degree from Lawrence College, Appleton, Wis., during the 110th commencement exercises of the school Sunday.

Mr. Glatfelter, who has been with the company which bears his name since 1908, was president of the paper mill from 1930 to 1954. Since then he has served as chairman of the board. He has been a leader in the paper industry, serving as past president of the Technical Ass'n. of the Pulp and Paper Industry; chairman and president of the Printing Paper Manufacturers Ass'n., and as an officer and member of the board of governors of the American Paper and Pulp Ass'n. He is currently a director of the Western Maryland Railroad Co. and York Hospital.

The award was presented to Mr. Glatfelter by Ernst Mahler, a director of Kimberly-Clark Corp., and a trustee of Lawrence College.

Dickerman Joins Appleton Div. as Chemist

G. Kent Dickerman, Jr., has joined the Appleton Division of Consolidated Water Power & Paper Co. He will serve as a chemist in the division's technical department.

Mr. Dickerman was graduated

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Centrifflers quickly pay for themselves out of savings in wear and tear on pumps, Jordans, wires, felts, knives, cutters and other equipment, to say nothing of their beneficial effect on product quality and uniformity.

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BIRD MACHINE'S 50th YEAR OF SERVICE TO INDUSTRY

from Western Michigan College with a BS degree in chemistry and has been employed as a chemist by Minnesota Mining & Manufacturing Co. since 1956.

R. T. Trelfa

Perkins-Goodwin Elects Trelfa V-P and Director

Richard T. Trelfa, who joined the Perkins-Goodwin Co. on June 1st, 1958, as director of technical services, has been elected a vice president and director.

After graduating from the University of Michigan in 1941, Mr. Trelfa joined the Hercules Powder Co. In 1952 he joined the Watervliet Paper Co. as technical director, progressing through the offices of operating superintendent and assistant general manager to the position of plant manager.

Since joining the Perkins-Goodwin organization Mr. Trelfa has been making his headquarters in the Kalamazoo office. In connection with his new duties he will move into the New York headquarters.

Consolidated Ups Bronson

John P. Bronson has been appointed sales manager of the box board division of the Consolidated Paper Co., Monroe, Mich.

Mr. Bronson joined Consolidated in 1945 as a laboratory technician. He was placed in box board sales in 1955.

Mangan Receives Honorary Degree at U. of Me.

Thomas G. Mangan, recently retired manager of the Otis Division of the International Paper Co., was one of six distinguished leaders in various fields who received honorary degrees at the University of Maine's 112th commencement exercises.

Abitibi Corp. Announces Executive Appointments

D. W. Ambridge, president, Abitibi Corp., announces the following executive and director appointments, effective immediately:

C. H. Rosier, vice president and general manager.

Mr. Rosier, together with E. J. Schultz, general sales manager; O. B. Eustis, mill manager; F. R. Boynton, secretary-treasurer; and A. J. Auden, woods manager, are appointed to the board of directors.

West Virgina Mill Announces Promotions

Robert S. Wilkins has been promoted to the newly created position of supervisor of traffic and purchasing, and Donald E. Messinger has been promoted to the position of purchasing agent at the Luke mill of West Virginia Pulp and Paper Co.

H. G. Wintgens

John Maloney

Correction

On page 17 of our June 1st issue, accompanying the article on the retirement of H. G. Wintgens, executive vice president of Charmin Paper Products Co., we inadvertently used a picture of John Maloney, vice president in charge of sales for Charmin. Above are pictures of both Mr. Wintgens and Mr. Maloney.

Nekoosa Names Smart Mill Superintendent

Joseph H. Smart has been named superintendent of the Nekoosa paper mill of Nekoosa Edwards Paper Co.

J. H. Smart

He succeeds Arthur Sarver who has been paper mill superintendent for the past 12 years. Mr. Sarver will continue in the Nekoosa paper mill as staff superintendent. "These changes in assignments are being made in preparation for Mr. Sarver's retirement." Charles H. Reese, vice president in charge of manufacturing, said, "and to assure a smooth transition while he is still available in an advisory capacity."

Mr. Smart is a native of Wisconsin Rapids and holds a master's degree in chemical engineering from the University of Wisconsin. He joined the company in November 1939 as a chemist in the laboratory. He has been a supervisor in testing and quality control work at the Port Edwards mill and was assistant paper mill superintendent of that mill before transferring to Nekoosa as assistant paper mill superintendent in April 1953.

WMU Awards Two Honorary Degrees

Two persons, one a former Kalamazooan and the other a benefactor of the University, received honorary degrees from Western Michigan University at its commencement rites June 13th. They are: Louis Calder, chairman of the board and a director of the Perkins-Goodwin Co., New York, and president for many years, Doctor of Laws, and David R. Tashjian, manager of the electronics engineering department, Westinghouse Electric Corp., Baltimore, Md., Doctor of Science.

Mr. Calder has been instrumental in providing WMU's department of paper technology through the Calder

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Foundation with funds for capital improvements. Now under construction on the campus is a $165,000 addition to the paper technology facilities, and the new fourdrinier paper machine was dedicated in Mr. Calder's name. He is also a director of the Southland Paper Mills, Inc., Lufkin, Tex.

Mr. Tashjian is a native of Kalamazoo, and studied at the University's elementary and high school, and later received his BS degree from the University of Michigan and an MS degree from the Massachusetts Institute of Technology. He has been associated with Westinghouse since 1941, and in his present position since 1955. While with Westinghouse six patents have been issued in his name.

West Virginia Ups Lyon

Paul Lyon has been named manager of marketing research for West Virginia Pulp and Paper Co. With the company since 1955, Mr. Lyon has been coordinator of financial analysis.

Mr. Lyon will be responsible for developing and implementing a comprehensive marketing research program at the corporate level.

Formerly with Lever Brothers, Mr. Lyon holds a B.S. degree in industrial administration from Yale University and a M.S. degree in industrial engineering from Columbia University.

Champion Names Nelson Asst. Export Sales Dir.

The Champion Paper and Fibre Co. has appointed Nicholas G. Nelson assistant director of export sales.

Prior to joining Champion, Mr. Nelson was manager of the government sales department of Bulkley Dunton, Inc., New York City; assistant to the president of Bulkley Dunton's Far East branch, based in Manila; and later resident manager of the Wessel Duval Co., Lima, Peru. He also served as manager of the foreign sales division and as technical representative for the Brown Co., Berlin, N. H.

Fowler Joins Butler Paper

John Fowler has joined the staff of the Butler Paper Corporations. He will act as special sales representative to the advertising field and in the national promotion of Butler paper lines through its divisions.

Mr. Fowler, previous to his new appointment, was the Midwest and Southwest sales representative of the Allied Paper Corp. Previously he had been in charge of sales promotion for A. G. Spalding & Brothers.

Oxford Transfers Perry To Northeast Sales Dept.

Auburn J. Perry is being transferred to the Northeast sales department of Oxford Paper Co. as a sales representative effective July 1, it was announced by Andrew M. McBurney, vice president, sales.

Mr. Perry joined the Oxford Paper Co. at its Rumford, Me., mill in September 1953 as a member of the manufacturing department.

Bird Promotes Two

Bird & Son, Inc., announces that Rogers Weed, Jr., will become executive assistant to the vice president of the building materials division, reporting to Eli L. Chamberlain vice president. Replacing Mr. Weed in his former post of Eastern manager is J. Douglas Johnston, who is transferring from Shreveport, La., where he has been Southwestern manager for the building products division.

If it takes 7.05 milligrams of Bond Blue B to match a blue on laboratory sheets weighing 3 grams, how many pounds of dye per ton would you call for, to produce the same shade in the mill?

Warning: A simple transposal to equivalent pounds of dyestuff per ton of stock will give the wrong answer.

For a technical article discussing the problem of adjusting a laboratory dye formula to meet requirements of the individual mill, drop us a line. It is the latest Sandoz publication, designed to increase the industry's understanding of color and its application to pulp and paper.

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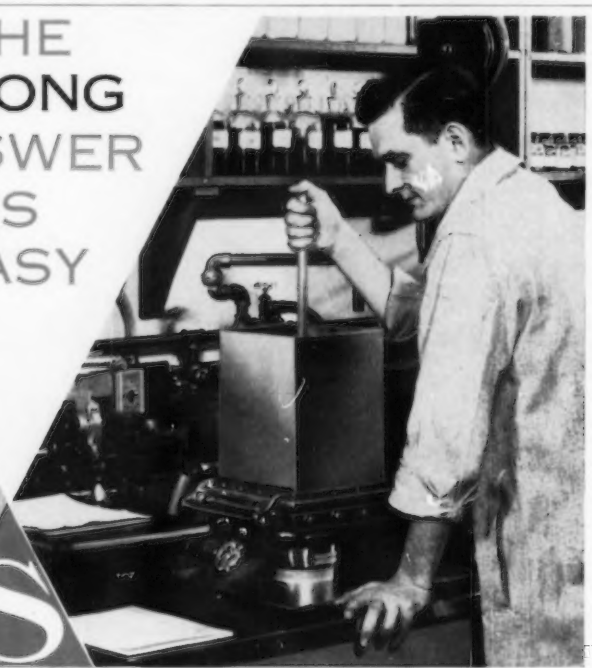

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THINKS AHEAD WITH PAPER

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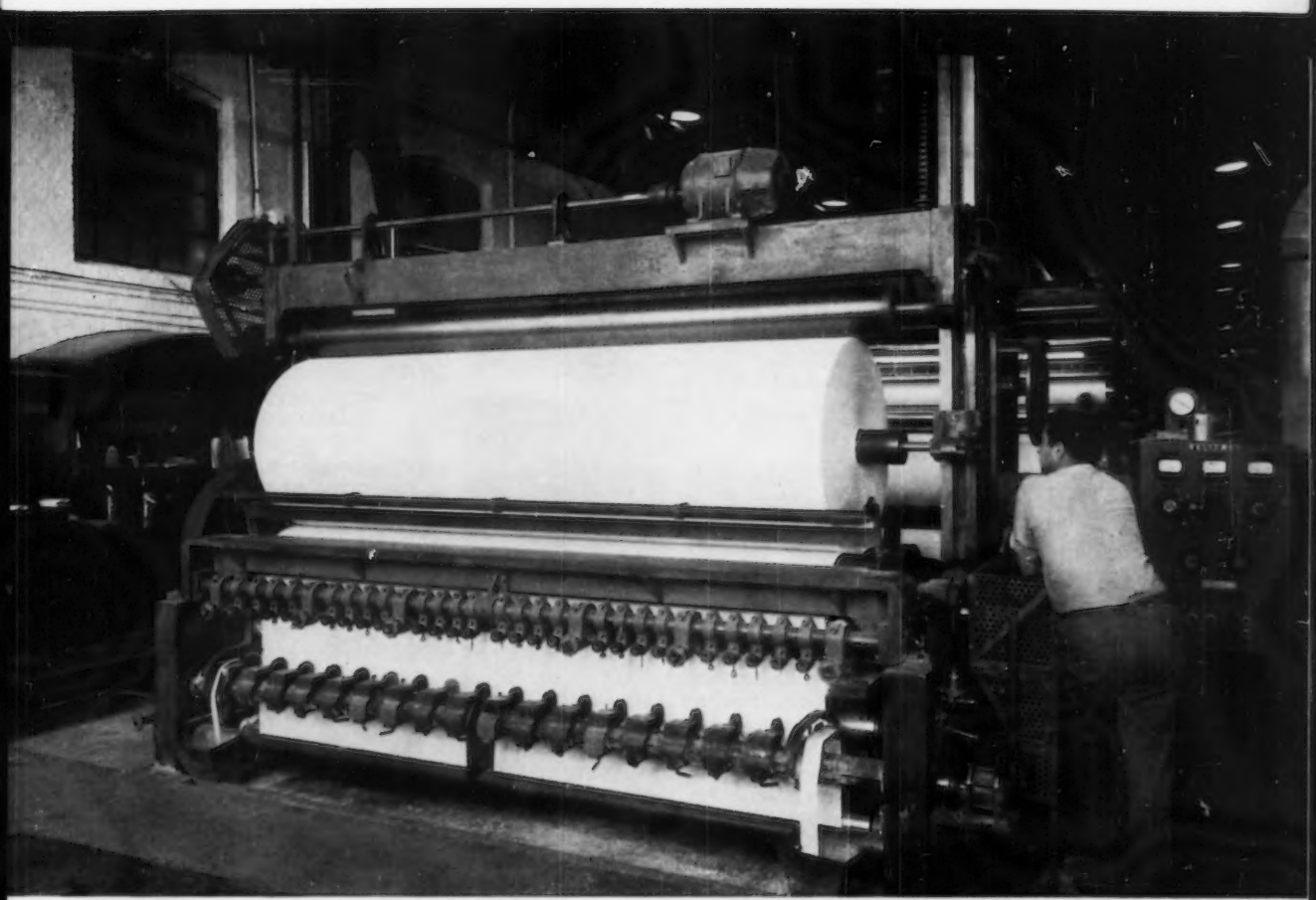

Slit, wound, ready to ship — one operation

These photos show how the Franconia Paper Corporation eliminated a costly rewinding operation.

You're looking at a Kidder 125-inch Master Mill Winder, installed in the Franconia plant as a paper machine slitter-winder nearly three years ago. Since then this high speed, high quality machine has been steadily producing rolls — as narrow as 6 inches, with diameters up to 40 inches — saving time and money every time it goes to work.

If you are producing similar rolls — and still rewinding them as a separate operation — it will pay you to find out how surely and easily you can cut your finishing room costs. Write today to Kidder Press Company, Inc., Dover, N. H. Eastern Sales Office: Empire State Bldg., New York 1, N. Y. Mid-West Sales Office: 400 Washington Bldg., Madison 3, Wis. West Coast Representative: Bojanower Machinery Service Corp., 5270 E. Washington Blvd., Los Angeles 22, California.

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Inverform – First Real New Concept in Papermaking Since Development of the Original Fourdrinier and Cylinder Machines

John C. W. Evans
Editor,
Paper Trade Journal

When the editor was in England last month he was privileged to inspect a significant new development in papermaking. This was the multiple wire forming machine, known as the Inverform, at St. Anne's Board Mills, Bristol. This fresh approach to paper and board manufacture was developed entirely at this mill through pilot plant experimentation and design. Although the company now has a full scale machine in operation in its mill, it still maintains two pilot machines in operation in its Research and Development Department. A number of British paper manufacturers have expressed their interest in the new process to the extent of financing research work on the pilot machines (more details on these later) to investigate the possible application of these to their operation. Paper machine manufacturers interviewed in England really expressed the opinion that the Inverform was the hottest thing to come along in papermaking for many years, even though their competitors hold an exchange license on these.

The Inverform machine involves the use of a fairly conventional fourdrinier wire arrangement *but* includes the addition of one (for paper) or two or more (for board) top wires running on top of the lower or fourdrinier wire. In each case (single or multiple top wire), stock is applied from simple flow boxes and slices located before the in-running nips formed by the top wires and the bottom wire. With a uniform stock distribution at the slice the stock is seized at the in-running nip so that many problems of formation variations on the conventional fourdrinier are eliminated. For example, there is no time for bubbles, waves, and other defects, etc., to develop before the formation is frozen. This permits higher consistencies than with conventional forming equipment. The other prime advantage is (in the case of multiple ply board) that water removal is upward (through inverted suction boxes) so that the additional water supplied by each new ply added does not have to be drawn down through each previously laid layer.

While St. Anne's Board Mills, a subsidiary of Imperial Tobacco Co., basically a producer of lightweight board for cigarette packaging (they have been using the equivalent of the American "flip-top pack" for years), have been primarily concerned with board, they have not allowed this to hamper their fresh look at the manufacture of all grades of paper and board to the extent of much more money than a North American mill of much larger size would consider spending.

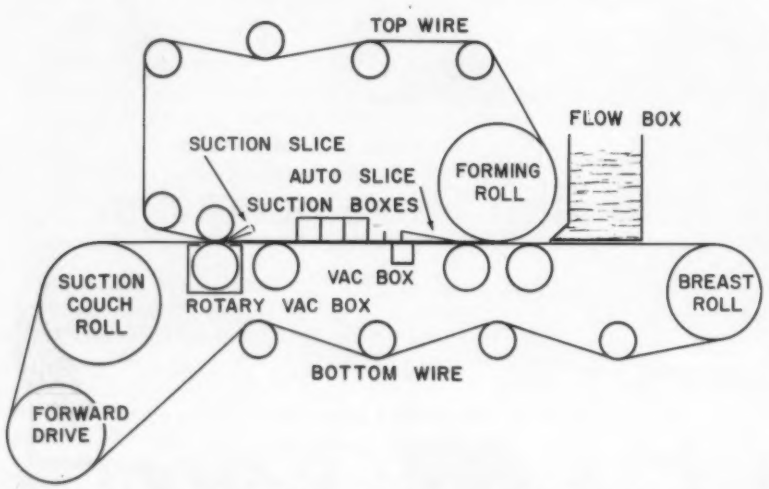


Figure 1. Basic principle of the Inverform is shown in this sketch of a one-unit machine.

Development of Process

The first multi-wire fourdrinier (Inverform) experimental machine was built by St. Anne's Board Mill in 1951 for investigation of high grade folding board production at faster speeds than possible with cylinder machines. This experimental machine was designed to produce a finished width of 20 inches and included only a wire section to which later was added a press section. The new method of operation indicated that not only could folding board be made at higher speeds but that quality was much improved. The method of frozen formation and upward dewatering was found to have many advantages and therefore it was on the basis of this process that all the later experimental success work was carried on.

The next step consisted of extending the length and increasing the speed of the original single and multiply experimental machine up to 2000 feet per minute. Next a high speed prototype single-ply machine using the Inverform process was built to run at speeds up to 5000 feet per minute.

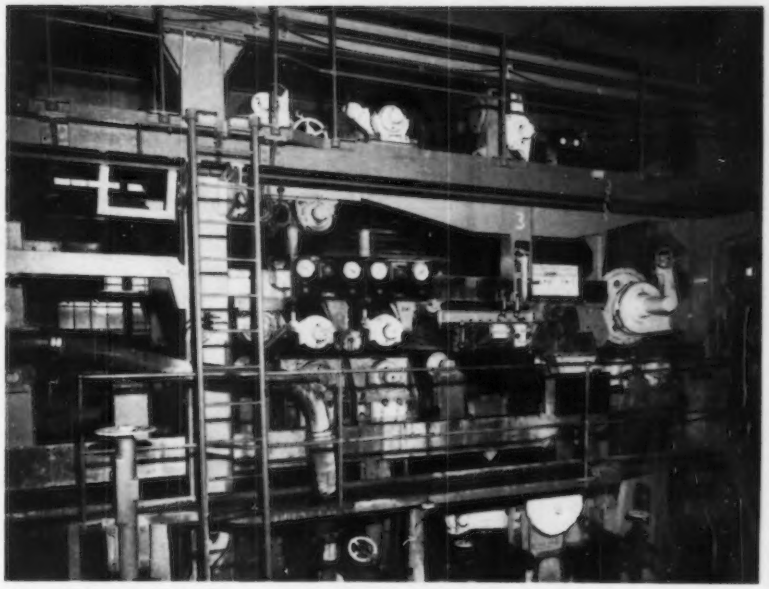
Details of Process

The Inverform machine provides a means of applying presure to a turbulent layer of pulp and water mixture during a very short period of time as the pulp suspension enters the in-running nip of each top wire.

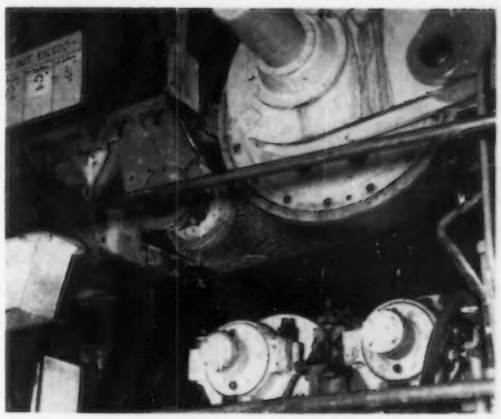
In its basic form the process operates as follows: Stock flows on to the bottom wire from a projection slice, immediately before an in-running nip, created by a top wire passing round a large diameter cellular roll

known as the forming roll. The bottom wire which represents the conventional fourdrinier is supported under the forming roll by large diameter table rolls, and the two wires (top and bottom) with stock between them, pass under a slice arrangement known as an "Auto slice," which is a stiff bevelled scraper blade pressed lightly against the inside of the top wire. This sweeps the water forced upwards through the top into a tray, from which it may be returned to the wire pit. When paper is being made and a single ply unit is used, or the first unit of a multi-ply (board) machine, some water passes downwards through the bottom wire but on multi-wire machines no water passes downward after the first ply has been formed; the water is extracted upwards, first by the "Auto slices" and then by inverted suction boxes on the top wires.

The sheet is next pressed by a rubber covered baby press roll, the bottom roll being in a suction box and the top roll fitted with a suction slice.

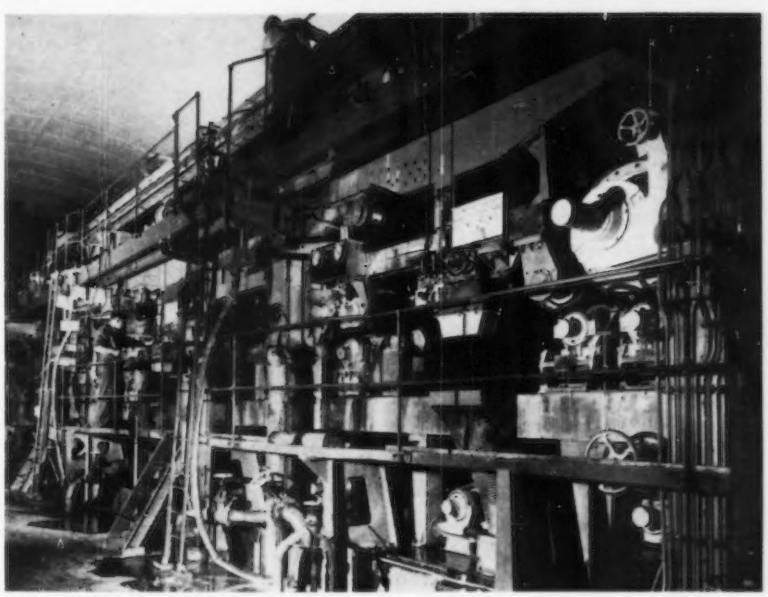


One of the four units on the board machine at St. Anne's Board Mills.



Closeup of a forming roll and nylon brush in raised position.

Looking along the wet end from the first unit towards the dryer section.

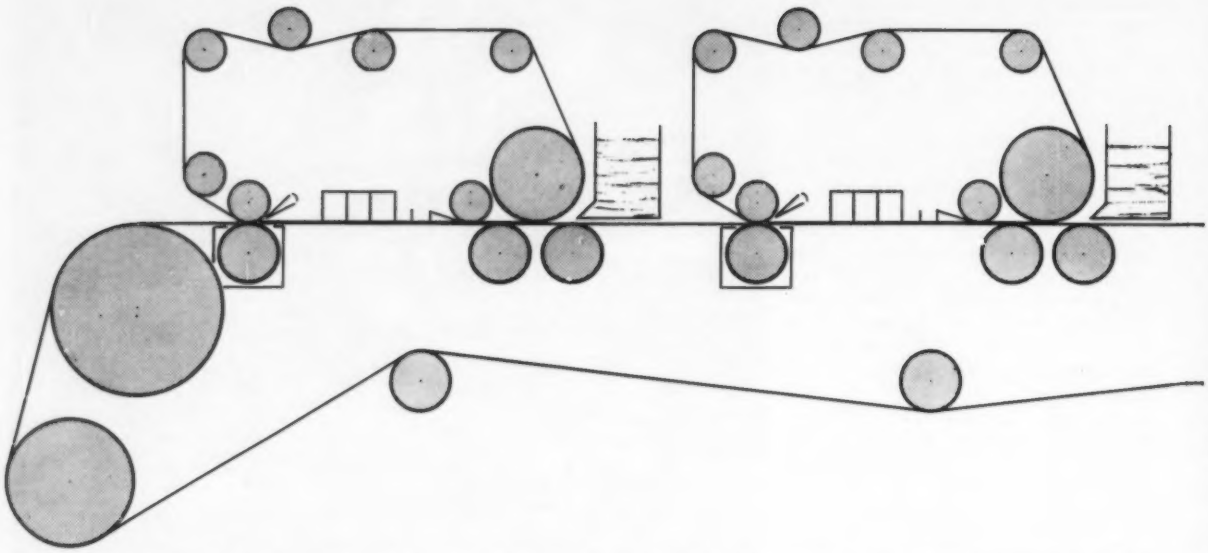


The Commercial Machine

In 1955 it was thought sufficient information was available for a production unit to be designed. A decision was made to replace an unsatisfactory wet end on the mill's No. 4 cylinder machine by a four-unit Inverform wet end. The press section was rebuilt at the same time to obtain the maximum speed possible from the machine using the advantages of the Inverform wet end without changing the dryer section.

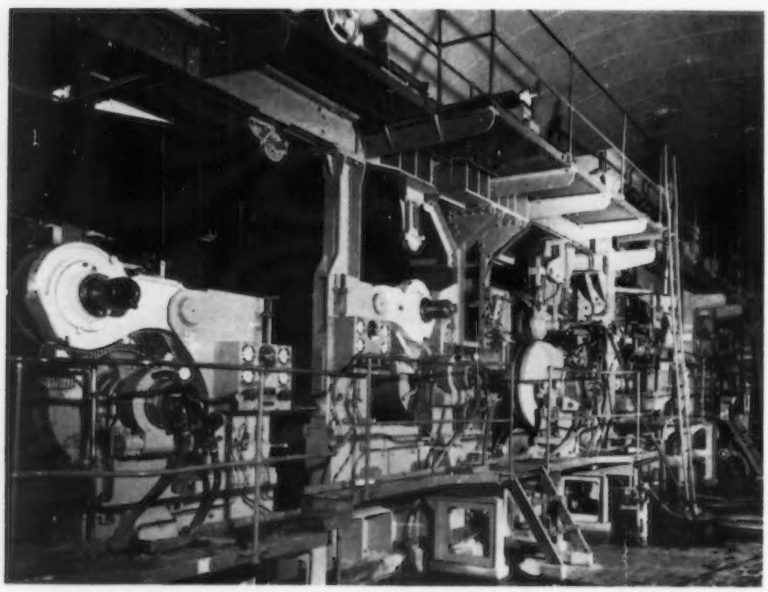
The new Inverform wet end consists of four top wires, each fed by a small headbox (flowbox) designed for consistencies above one per cent and fitted with conventional projection slices with adjustable top lips. The top wires are each about 40 feet long by 140 inches wide and the main wire is 200 feet long. Arrangement of the main or bottom wire is very similar to a regular fourdrinier, but the top wire installations present many very interesting engineering and hydraulic problems.

What might be called the top wire rolls, but which St. Anne's labels "Forming" rolls, which guide the top wire into the nip, are very important. They are of cellular stainless steel construction, very rigid and ground before putting on a facing wire cloth of 14 mesh stainless steel which is stitched, as on a drum mould. Adjustment of the relationship of the top and bottom wires under the forming rolls is achieved by raising or lowering these rolls.



The "Auto slices" which sweep up the expressed water after the forming rolls, consist of resin bonded laminated blades with stainless steel trays. These blades are rigidly mounted in their assemblies in order to ensure uniform contact across the width of the wires. Means are provided for adjustment so as to vary the contact pressure against the wire. St. Anne's reports that blade wear has been surprisingly small.

Because of the limitations of the dryer section, it was not possible to operate this machine above 400 feet per minute on board of 45/50 pounds per 1000 square feet. At this speed it was found the water would not rush up the Auto slice and use was made of a simple nylon bristle brush driven at 600 r.p.m. to sweep the water up. Each top wire contains a number of inverted vacuum boxes and a pair of nip rolls, with a suction slice on the top side of the nips with the bottom rolls running in a vacuum. Automatic wire tensioning and guiding are used successfully on the top wires as on the bottom wire. Serious ridging of the flat boxes was experienced during early operation but was almost entirely eliminated by continuous oscillating of all wires. This proved to be equally effective on the boxes on the bottom wire. The four top wire frames are individually hinged at one end so that they can be lifted hydraulically. This can be accomplished in a few seconds. As a top wire is lifted the vacuum is automatically shut off, the inverted vacuum boxes in that wire and the helper drive is shut down.



Fourth unit is in foreground of this view of Inverform wet end.

Commercial Machine Drive

The whole wire section is driven by an electronic drive using magnetic amplifiers, with the forward drive roll (after the couch) as the master section. The couch, breast roll, main wire wash roll, and the top baby press roll in each wire have helper drive motors. The company is still exploring for the best drive arrangement. The couch and forward drive roll method are under review. The forming roll for one top wire is now being driven by a helper drive as an alternative to the top baby press roll, to try to ascertain the most effective system.

The electronic drive was extended to include the suction press section, as St. Anne's felt that they might at some future date wish to install a suction pick-up, an example of the all inclusive forward thinking of St. Anne's management. The remainder of the board machine is driven by short center V-rope variable speed sections from a line shaft.

Vacuum requirements are even less than originally thought and though they first installed water ring vacuum pumps for the inverted and the bottom "rotary" vacuum boxes, they have discovered that a simple type of exhauster fan would be adequate. Vacuum in boxes does not exceed three and one-half inches Hg and

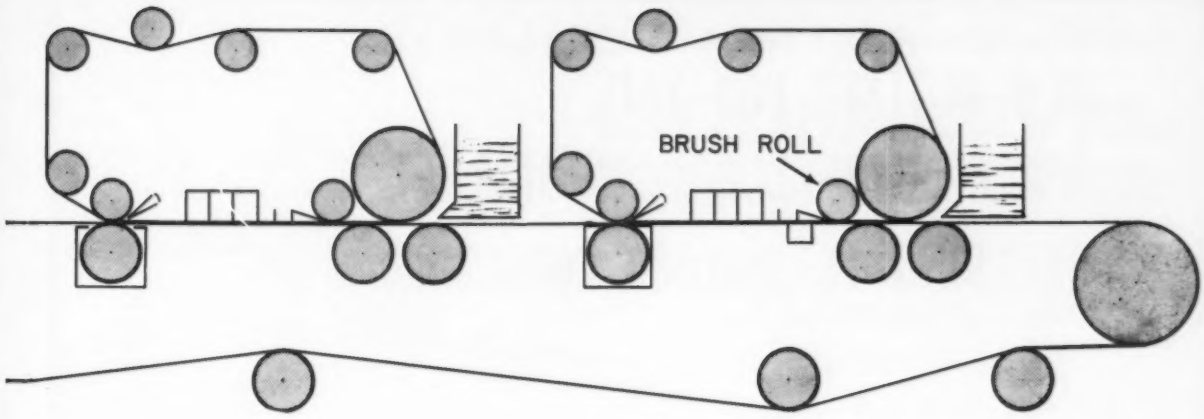


Figure 2. Simplified drawing indicates general arrangement on the Inverform commercial machine at Bristol.

in many cases two inches of mercury is adequate. In fact the mill has on the machine a sign telling the crew not to exceed these figures.

Wire changing has been made relatively easy by the use of wires seamed on the machine using an automatic seam brazing device which can join up a wire in half an hour. This four-ply Inverform machine has been running for almost a year and has been operating on white-lined chip, white-lined manila and body board for coating at a basis weight range between 45—80 pounds per 1000 square feet with flow box consistencies varying with pulp characteristics, but ranging between 1.0 and 1.8 per cent.

Board Quality Improved

It has been found that board quality compares more than favorably with cylinder boards at the same speed and the editor reminds you that customer requirements are much more rigid in Europe than in the United States.

St. Anne's has found that with the Inverform, bulk has been increased from three to five per cent, depending on grade. As a last comment on quality, ply adhesion has been found to be better than on a cylinder machine.

More Experimental Data

It has been found that speeds much higher than those possible on No. 4 machine, limited by drying capacity, were obtained on the experimental machine indicating that all the advantages can be retained. It is of particular interest that from the start, results from the pilot plant have been readily translated to full scale operation.

It is quite obvious that with the Inverform machine, it is vital that the stock fed to the wires be clean. St. Anne's uses Linblad vibratory screens on the stock for each individual headbox.

Future Outlook

Now that the company has a full-size commercial machine in operation it has not relaxed its research efforts. Both the multi-wire (board) and single wire (paper) pilot plant machines are maintained in almost continual experimental operation.

On the multiwire experimental unit many furnishes have been tried, both long and short fibered stock with freenesses ranging from 650 to 50 C.S.F. Obviously different operating conditions have to be used for each different stock but satisfactory results have been obtained in general with unique consistencies at the head box as follows: Short fibered stocks from 1.5 to 1.8 per cent; and for long fibered stocks from approximately 0.7 to 1.1 per cent. These high consistencies are unusual for both paper and board formation and obviously offer many advantages. St. Anne's reports that wide changes in freeness have little or no effect on operating efficiency.

St. Anne's have found that with the Inverform it is not necessary to closely match stock velocity with wire velocity, although by making use of this variable some control can be obtained over the dimensional properties of the product. When producing a single ply as a first ply of a multiply sheet, it has been found possible to apply a basis weight equal to approximately 55 pounds per 1000 square feet. On the following plies 22 to 25 pounds per 1000 square feet have been applied successfully and regularly. The multi-wire experimental machine has been run at speeds as high as 1400 feet per minute producing a four-ply sheet.

The mill is conducting wide ranging research into the use of the Inverform for manufacture of grades of paper and board in which they have no direct interest. The single ply (one top wire) experimental machine has been equipped with a drive which permits it to run at speeds up to 5000 f.p.m. As an example of the work being done, we can report that they have made newsprint on this machine at 3400 f.p.m. There are a number of potential advantages in the use of the Inverform single-wire machine for paper. Among these are: the very short forming area which permits a much shorter wet end than on a conventional fourdrinier; the higher headbox consistences used reduces the size of pumps, motors, headbox, etc., required; and the possible lower moisture content entering the dryers.

Experimental runs are being carried out on both machines trying many different furnishes, grades and weights of paper and board. It has been found possible to produce new types of paper and board with special characteristics not possible with the conventional machines.

In Appreciation

The editor wishes to express his appreciation for all the kindnesses shown him by R. J. Thomas, chairman and managing director of St. Anne's Board Mills when he visited the mill at Bristol.

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What Are the Newest Trends in Coating?

Our editor in attendance at the recent Coating Conference held in Boston (see Paper Trade Journal, June 8, 1959, for a detailed report) tried a new approach to convention coverage in order to give our readers a different slant on the meeting. He turned himself into an inquiring reporter with camera and asked eight recognized experts in the field "What's New in Coating?" While they were answering he snapped pictures and noted their replies. Here are the results:

Harold M. Annis, Vice President, Research and Development, Oxford Paper Co.—"The significant growth and rapid rate of technological change in the coating of paper and paperboard is related to quality improvement through the utilization of new advances in coating methods, drying methods, improved coating materials and a better understanding of coating fundamentals and use requirements."

Dr. William H. Aiken, Director of Research, Diamond-Gardner Corp.: "Developments in filled boxboard are very active, which reflects the current oversupply of board and the competitive market condition. While a good base sheet can yield a coated sheet of excellent print quality when properly coated by an air knife, Champion or trailing blade processes, the trend is toward increased use of the air knife for coating filled boxboard. This is because the uniform coating applied by the air knife gives greater hiding power for a given weight of coating and allows the production of a high brightness coated board from a sheet with top liner of reduced brightness. The filled boxboard industry is doing a substantial amount of work to improve the cylinder machine and stock preparation processes to make a better base sheet for coating at a reduced cost."

O. W. Callighan, Director, Customer Relations, Minerals and Chemicals—"There is a quality in English clays that American producers have never been able to approach. The original inroads made by American producers of clay in replacing the English product were primarily based on price advantage. Then, as the American mills demand for clay grew with the advent of machine coating, earlier requirements for higher solids and high brightness lost their primary importance because they are less thixothropic at high solids. The future, in my opinion, holds that American producers will, through research, meet the again increasing requirements for brightness and the need for improved packing properties. Speaking of the clay industry, it is my opinion that there will be no problem with coating formulations as the coating industry progresses in its attempts to achieve even lighter weight grades than are being produced now. However, there is a problem of paper mill equipment. We know we can coat at speeds up to 4000 f.p.m. (this has been done in pilot plants) but no machinery is available as yet to reach such speeds in the mill."

R. W. Hagemeyer, Manager, Pigments Department, Wyandotte Chemicals Corp.—"A very specific trend is developing in the coating field with publication and similar grades. The blade is taking us away from glossy papers. Thanks to the trailing blade coater we are now getting a very flat surface which means that we are getting away from gloss. With the blade giving us a flat surface we no longer have to use shine as a measure of surface smoothness. I would say that in the next two years or so we will see duller papers on the market. These duller papers will be easier to read, they will print better and they will perform better all around. I am speaking here both for letterpress and offset grades. All of this is, of course, connected with the desirability of bulk which you lose when you

supercalender the sheet. If you can cut down on calendering by producing a smoother sheet in the first place you do, in effect, pick up bulk. And the blade is just the coating equipment that will do it. I believe that the trade will accept low gloss papers if the grades are properly presented. If you have a sound story, backed up by fact and sound reason, people will accept it. Ours is a performance industry anyway and we have therefore experience along this line."

J. Thomas, Assistant Research Director, S. D. Warren Co.—"The most significant trend, it seems to me, is the considerable upgrading that is being done in the board industry. This is quite apparent to me here at the TAPPI Coating Conference because we see people here whom we have never seen at these conferences before. Double coating makes sense and this, too, is a trend, as our Dr. Frost has told you. You can liken double coating to a paint job. First you put on the prime coat and then you finish the paint job with the final coat. And that's what we are doing in our industry. I have heard that more cast coatings will be done in the future but the patent situation must be considered in that field. Cast coating will be more common but I don't believe that it will be found everywhere in the present state of the art because it is too slow. I do not believe you would call what I am going to mention now a trend but this is an overall situation which I notice more and more in our field—there are today so many coating methods that it is becoming a problem to know which one to choose. Technical men are all 'shook up' as to which way to move in making the decision for their mills as to which coating method to use. I don't think there is a panacea and I don't believe that the trailing blade coating method will replace the air doctor method overnight, if ever."

Dr. F. H. Frost, Director of Research, S. D. Warren Co. — "The trend is toward double coating which Warren introduced on a large scale. There was of course double coating for years but Warren first began it as an important operation. The trend is toward coating all paper and it won't be long until all paper is coated from newsprint to the most expensive grades. The reason is of course that pulp is more expensive than pigment. Another reason is that cellulose is hydrophillic whereas ink is hydrophobic. Therefore, ink and cellulose basically don't like each other. When you coat with a pigment that is hydrophobic then you have a like surface which means that the ink and the pigment surfaces like each other. Double coating can be either off and on the machine or both coatings can be applied on the machine. Very few mills will do both which means that the mills are making their choice now and in the near future."

C. R. G. Maynard, Technical Division Manager, Wiggins Teape and Co., Ltd., England — "As far as trends go I am hard pressed to tell you general trends in the industry because we in England are about 10 to 15 years behind the coating field in this country. However, you might be interested in some developments over there. We have one trailing blade installation in England now. This is off the machine running on bread wrap at Dartford Paper Mills which is part of the Wiggins Teape group. This trailing blade coater was installed about 18 months ago. We are now investigating the possibility of using the trailing blade coater for coating NCR paper which we already manufacture. For this we are investigating Black-Clawson's "Flexiblade." If this works out as we hope it will, we will have an on-the-machine installation. Generally I would say that we are following very much along the lines of what is being done in America."

P. J. Fitzpatrick, Technical Representative, American Cyanamid Co.—"The coating industry has reached the point where we have to look toward chemicals to accomplish (or at least assist greatly) the futuristic demands with which we are already being faced. I am not speaking here as a sales representative of one of the chemical suppliers when I say that the trend in the future will be increasingly toward making improvements with chemicals. What has been done so far with mechanical improvements will from now on be done with natural and synthetic resins. There will be an increasing search for resins to improve strength characteristics of the raw coated stock. I am talking here about internal fiber binding which would include wet strength and dry strength resins to gain Mullen, tear and increased drainage rate. This is only natural because we are now being asked, in effect, to develop a 30-pound coated sheet which has the same strength characteristics as a 40-pound sheet. There are already available certain products which will tend to increase bulk and they will help to give us more mileage per ream weight. We have a real challenge to improve coated papers. The trailing blade certainly is an example of what can be achieved in our field."

Semi-Chemical Recovery Processes And Pollution Abatement

Richard W. Brown, Ass't Dir. of Labs.
Donald T. Jackson, Tech. Director,
Hammermill Paper Co., Erie, Pa., and

John C. Tongren, Tech. Director,
Watervliet Paper Co., Watervliet, Mich.

The authors describe six of seven recovery systems for sodium and sulphur from the various sulphite pulping processes. No effort has been made to compare them since it is obvious the most advantageous one will depend on local conditions.

Surprisingly, the authors have over-looked one recovery method which has been in commercial use for five years, namely, that of Stora Kopparberg, in Skutskar, Sweden—Editor's note.

All industry, and particularly our industry, pulp and paper, has, in recent years, been giving more and more attention to the problems of stream pollution and pollution abatement. This applies to new installations as well as existing plants and processes. In fact, one of the prime factors in considering any new plant or process is stream pollution, and in many instances this has limited or prevented expansion programs. A typical case in point is the neutral sulphite semi-chemical pulping process.

In the last 15 years the semi-chemical process for producing both bleached and unbleached pulp from hardwoods has grown tremendously. It is one of the most significant pulping developments which has occurred in many years. The successful application of this method of cooking wood has opened up vast stands of hardwood which heretofore were not considered suitable for the production of quality paper pulps.

One important factor has hindered this growth. This is the lack of a satisfactory method for treating the spent pulping liquor to prevent stream pollution. The primary problem concerns the spent pulping liquor, but, in the case of bleached pulp, the bleach plant effluent will also require treatment.

From Technical Paper No. 115 presented at the 1959 annual meeting of the National Council for Stream Improvement, Inc.

A suitable treatment method of the spent pulping liquor must not only reduce stream pollution but must do so at a cost which does not adversely affect the company's economic position. A recovery process which will recover the cooking chemicals in the effluent is most likely to satisfy these requirements. Research on recovery processes has occupied the attention of many very competent engineers and chemists for a number of years. To date, however, no generally satisfactory method has been found, although a number of processes are being studied commercially. The purpose of this discussion is to review the status of the more important processes and to give our evaluation of their future promise.

Stages of Development

There are six different processes which have progressed beyond laboratory bench-scale, and are in various stages of development. Some are further advanced than others, but all have had sufficient study to indicate some idea of their possibilities of commercial success. All the processes are claimed to destroy the organic material which produces stream pollution and recover the cooking chemicals. These are as follows:

ZIMMERMANN PROCESS

The Zimmermann process has been described previously in detail in a paper presented at a section meeting of the National Council for Stream Improvement. A simplified flow sheet of the process is shown in Figure 1. A flameless wet combustion is used to convert the organic material in the spent liquor to carbon dioxide and water leaving a solution of the inorganic salts. The spent liquor mixed with compressed air at temperatures typically of 500°F. and 800 p.s.i. pressure reacts smoothly when held in a reaction vessel sufficiently long for almost complete combustion.

When oxidation is complete, the steam and non-condensable gases,

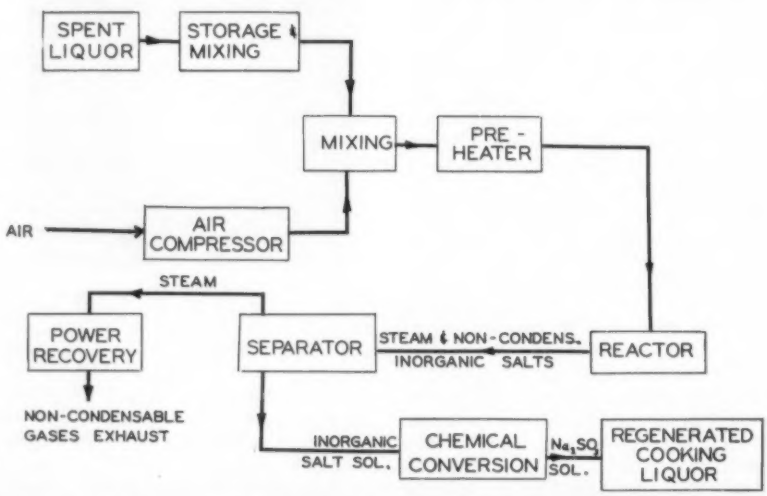


Figure 1: The Zimmerman process developed by Sterling Drug Co. and tested on a commercial scale by Hammermill Paper Co.

mainly nitrogen and carbon dioxide, are separated from the solution phase. The energy in the gases is then converted into usable form by passing through suitable gas expansion engines and turbines.

The solution phase contains the sodium sulphur values present in the spent liquor in the form of sodium sulphate. The sodium sulphate is converted chemically into sodium sulphite by treatment with lime and sulphur dioxide. This regenerates the sodium sulphite cooking solution, leaving a residue of calcium sulphate as a waste by-product.

The Zimmermann process was one of the first to be tested on a commercial scale. Hammermill Paper Co. operated a 30-ton a day unit during 1954 and most of 1955. Currently, a larger Zimmermann plant is being constructed at the Borregaard AB Mill in Sarpsborg, Norway. This plant is designed to handle the spent liquor from 500 tons a day of calcium base sulphite pulp. Equipment is being provided to recover the heat value but no attempt is being made to regenerate any cooking chemicals. Start-up of the plant is scheduled for the next few months.

Currently, Sterling Drug is concentrating their attention on disposal of sewage sludge from municipal sewage treatment plants and has not been active in the pulp and paper field.

The Zimmerman process possesses many desirable features, but much still remains to be learned concerning it. The wet combustion has been proven to be a technical success. However, as yet the conversion of the sodium sulphate to sodium sulphite has not been proven on a large scale, although it is believed that design of a suitable plant can be worked out. Relatively little is known about recovering the energy present in the stream and non-condensable gases. This is a new and untried field which will require extensive research evaluation before its success or failure will be known.

MEAD PROCESS

The Mead process starts out with an evaporation and furnacing operation similar to the recovery furnace operation practiced in the kraft industry. The smelt from the furnace, consisting of sodium sulphide and carbonate, is dissolved and clarified as in the kraft industry.

The key to the recovery operation is to convert the sodium sulphide to sodium sulphite, the desired cooking chemical. The basic flow sheet in the Mead process is given in Figure 2. A portion of the flue gas from the

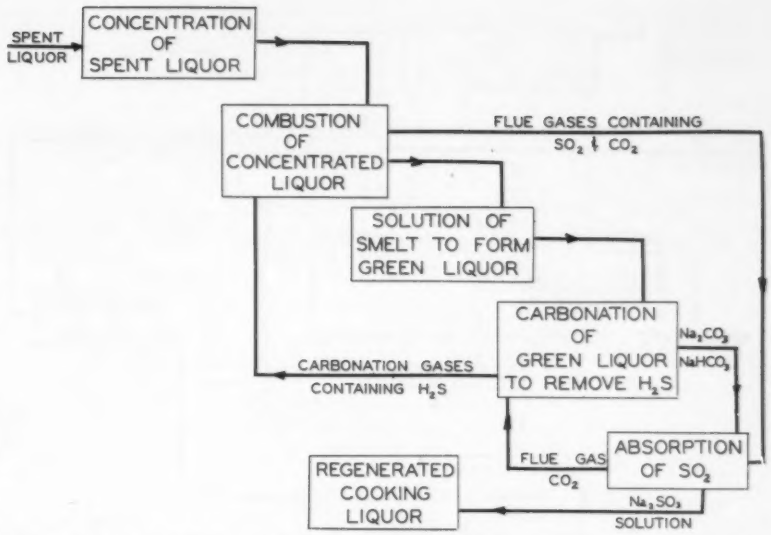


Figure 2: The Mead process developed by the Mead Corp. and now promoted by Babcock & Wilcox Corp.

furnace is passed counter-current to the smelt solution in suitable packed towers. Carbon dioxide is absorbed in the alkaline smelt solution and hydrogen sulphide is liberated and driven out of solution. The hydrogen sulphide is returned to the furnace where it is burned to sulphur dioxide. The carbonated solution, which is essentially free of sulphide, is passed counter-current to the furnace flue gas in another packed tower. The sulphur dioxide contained in the flue gas resulting from the combustion of hydrogen sulphide and the spent liquor is absorbed forming the desired cooking liquor.

The first commercial installation of the Mead process was made at Watervliet Paper Co. in Watervliet, Mich. This plant was designed to handle the spent liquor from a 50 ton per day semi-chemical pulping plant. The plant has been in operation for approximately a year. A second plant of 200 tons capacity has just recently started up at the Lynchburg, Va., mill of the Mead Corp.[1]

The Watervliet plant is now producing recovered pulping liquor of satisfactory quality for the pulp mill. It is too early to have a clear picture

[1]This first large commercial size unit recently attained full scale production. See PAPER TRADE JOURNAL, May 25, 1959, for a complete report on operation.

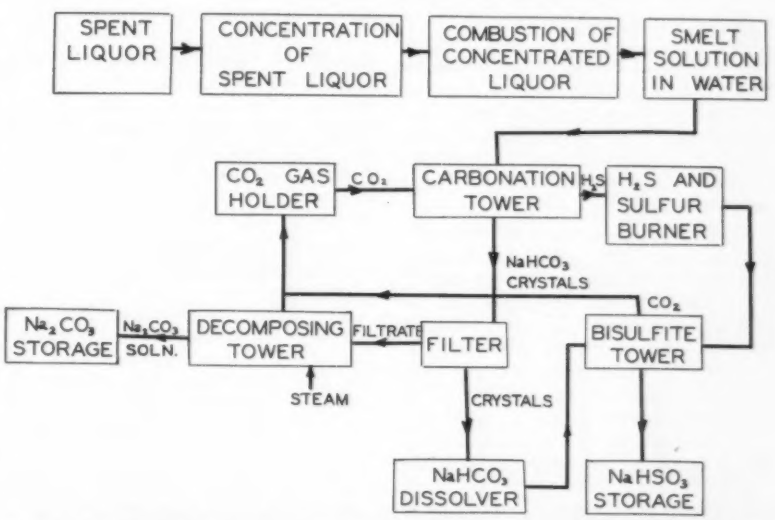


Figure 3: The Sivola process invented by Mr. Sivola and promoted by Combustion Engineering Corp. at Rauma, Finland, as used on Na-base sulphite cooking.

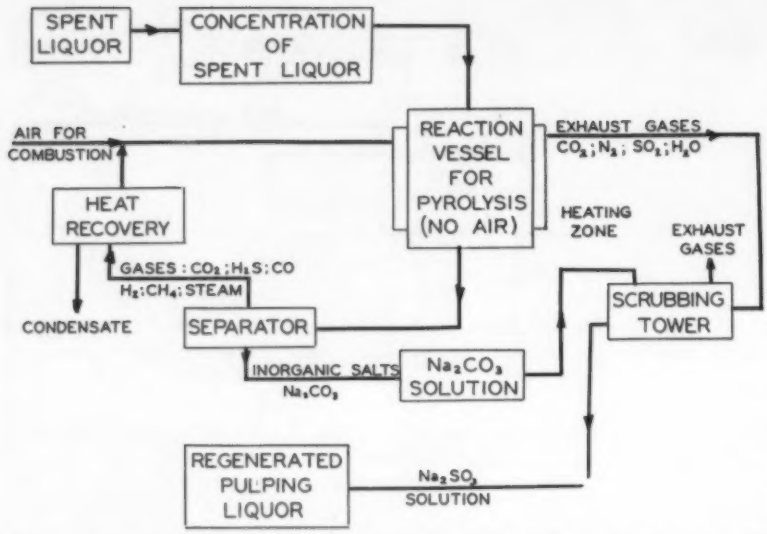


Figure 4: The atomized suspension technique developed by Dr. Gauvin at the Pulp and Paper Research Institute of Canada.

of the economics. However, it is believed that the value of the recovered chemical is sufficient to cover the operating cost and the fixed charges. The Watervliet plant is relatively small and a better picture of the economics may not be obtained until the large plant at Lynchburg is in production.

A number of problems have been encountered. Corrosion has been serious, necessitating many changes in equipment. It has been necessary to use supplemental fuel oil to obtain smooth furnace operation. This reflects the low heat content of the spent liquor and the rather small size of the recovery furnace.

SIVOLA PROCESS

The Sivola process is quite similar to the Mead process. A plant utilizing it has been operated for six years at Rauma-Repola OY in Rauma, Finland.[2] A description was given at the TAPPI Alkaline Pulping Conference in September 1958.

The chemical recovery process starts out with evaporation and burning of the spent pulping liquor. Conversion of the smelt solution to sodium sulphite cooking liquor is carried out as shown in Figure 3. The green liquor from the recovery furnace operation is carbonated to remove sulphide in the form of hydrogen sulphide and convert the sodium sulphide to sodium carbonate and bi-carbonate.[3] This is basically similar to the Mead process with the important exception that essentially pure carbon dioxide is used instead of flue gas. This is claimed to result in a better quality cooking liquor which is free drom sulphides and thio-sulphates. The hydrogen sulphide is burned to sulphur dioxide which is passed counter-current to the carbonated solution to produce the desired cooking liquor.

The Sivola process is being considered by Nekoosa-Edwards Paper Co. for installation in connection with its acid sulphite pulping operations. At present, no plans are under way for using this process on semi-chemical pulping liquors. Combustion Engineering has informed us that it would be difficult to justify any of the presently known recovery processes, including the Sivola process, upon an economic basis except where large semi-chemical plants were concerned. They would not recommend installing a Sivola conversion plant in conjunction with unbleached semi-chemical production. However, they feel it may be justified for large-scale bleached pulp installations.

The Sivola conversion process is considerably more complicated than the Mead process. Undoubtedly the equipment cost would be higher. It may well be that certain grades of pulp will require the better quality cooking liquor obtained than is possible with the Mead process. However, for most semi-chemical operations, it seems likely that the Mead process produces a satisfactory liquor.

An important advantage claimed for the Sivola process is that it is essentially free of odor. There has been no commercial evaluation of the process in this country as yet. Since it is extremely difficult to translate experiences of foreign installations to American conditions, a demonstration plant in this country is required in order to evaluate it.

GAUVIN'S TECHNIQUE

The atomized suspension technique developed by W. H. Gauvin and his associates at the Pulp and Paper Research Institute of Canada is a comparative newcomer in this field. It utilizes a different approach and has created considerable interest in the industry. A simplified flow sheet is shown in Figure 4. The heart of this process is a high temperature pyrolysis performed in the absence of air. This breaks down the organic part of the spent pulping liquor to various simple fractions, such as carbon, hydrogen sulphide, carbon monoxide, carbon dioxide, methane, hydrogen, water vapor and others. The inorganic fraction appears mainly as sodium carbonate. The gases are separated from the solids and burned to provide the necessary heat and to convert all the sulphur compounds to sulphur dioxide. The sodium carbonate is then dissolved and used to absorb the sulphur dioxide resulting from the gas combustion which produces the desired cooking liquor. So far the experimental work has been carried out in small pilot reactors at the laboratories of the Pulp and Paper Research Institute of Canada.

Recently Green Bay Pulp and Paper Co. of Green Bay, Wis., has announced it has submitted plans to the Wisconsin State Committee on water pollution for engineering and construction of a commercial size reactor. A 60-ft. reactor operating at over 1,400°F. is proposed.

In addition to the Green Bay action, Dr. Gauvin has informed us that two Canadian mills are currently studying the engineering and economic aspects of semi-chemical recovery by this technique. It is believed that a commercial plant would be installed if the studies indicate it might be successful.

The primary laboratory studies on the atomized suspension technique indicate its future promise. However, competent engineers have raised many questions which can only be

[2] A description of Rauma's recovery system will be forthcoming in an early issue of PAPER TRADE JOURNAL. This article, written by Editor John Evans, will also include a report of this mill's two-stage acid-alkaline suphite cooking process.

[3] An intermediate step between the bicarbonate dissolver and the sulphitation is used at Rauma (refer to Fig. 3). $NaHSO_3$ solution from the sulphiting tower is split, part being used as cooking liquor, the rest being mixed with the dissolved bi-carbonate. Na_2SO_3 results. This is fed to the sulphiting tower to perpetuate production of $NaHSO_3$.

answered on the basis of full-scale installations. Such an installation may come soon which will provide a much clearer picture of the application of this process to semi-chemical recovery.

BRADLEY PROCESS

The Bradley process, which is under development and promotion by Western Precipitation Co., also starts out with evaporation and burning of the spent liquor. The flow sheet is basically as shown in Figure 5. The smelt solution is concentrated in a suitable salt evaporator to cause crystallization of sodium carbonate. This is removed from solution and the residual filtrate containing the sodium sulphide and some sodium carbonate is recycled to the furnace. A certain amount of the sodium sulphide is decomposed in the furnace yielding sulphur dioxide in the flue gases. The flue gas containing the sulphur dioxide is fed counter-current to the sodium carbonate solution prepared from crystaline sodium carbonate to form the cooking liquor.

Initial investigation on the process was carried out by Western Precipitation in cooperation with Nekoosa-Edwards Paper Co. A number of the unit operations were studied and engineering data obtained on a large pilot plant scale, but no full installation was made. Consolidated Water Power and Paper Co. has installed a 75-ton per day plant utilizing this process in connection with its semi-chemical operation at Wisconsin Rapids, Wis.

The Consolidated plant has so far been run only on an experimental basis. Information has been obtained on the individual steps but continuous commercial operation has not been achieved as yet. This is planned for 1959 and should give a good picture of the advantages and problems which will arise.[4]

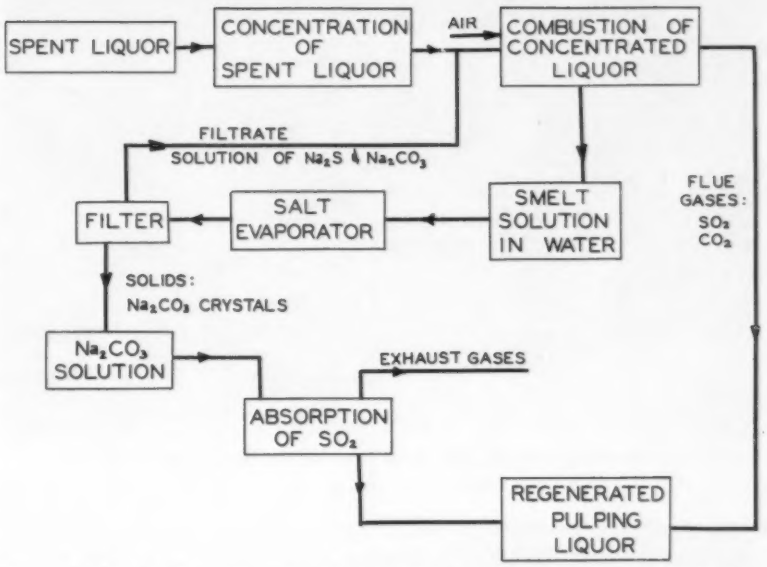


Figure 5: The Bradley process invented by Mr. Bradley and promoted by Western Precipitation Corp.

IPC PROCESS

The process developed by the Institute of Paper Chemistry has been installed in five different locations. The first installation was in the Tomahawk, Wis., mill of Owens-Illinois Glass Co. in December 1953. Others are at Big Island, Va., mill of Owens-Illinois, the Acme, N. C., plant of Riegel Paper Corp., the Filer City, Mich., plant of American Box Board Co., and Huss Ontonagon Pulp & Paper Co. of Ontonagon, Mich.

The recovery process, as shown in Figure 6, utilizes conventional evaporation and burning. Conversion of the sodium sulphide in the smelt solution to sodium sulphite is accomplished by direct reaction with sulphur dioxide at temperatures approaching the boiling point of water. Under these conditions, sulphur dioxide directly replaces hydrogen sulphide, giving a solution of sodium sulphite. The hydrogen sulphide evolved can then be burned to sulphur dioxide which is reused. A discussion of the laboratory work has been published, but very little information is available on the commercial application. It would seem likely that an odor problem would be associated with this particular recovery methods.[5]

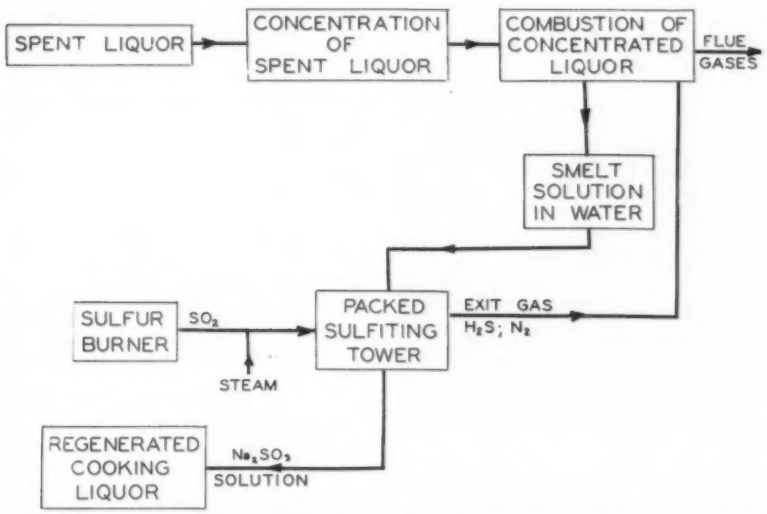


Figure 6: The process patented by the Institute of Paper Chemistry and now installed by the Babcock & Wilcox Corp.

Evaluation of Future Promise

Considering all these different approaches to the problem of semi-chemical recovery, one conclusion stands out. That is, that there is no

[4] Continuous commercial operation using both spent NSSC and sulphite liquors is recounted in PAPER TRADE JOURNAL, May 18, 1959.

[5] A seventh process, in operation for at least 5 years, is used by Stora Kopparberg's Skutskar, Sweden, mill. This system will be detailed, based on firsthand information, in a forthcoming article by PAPER TRADE JOURNAL's Editor Evans.

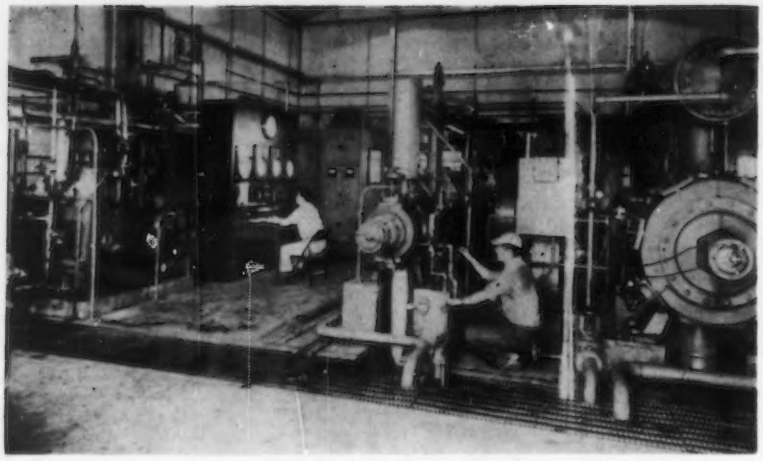


Figure 7: Zimmerman process pilot plant operated by Hammermill Paper Co.

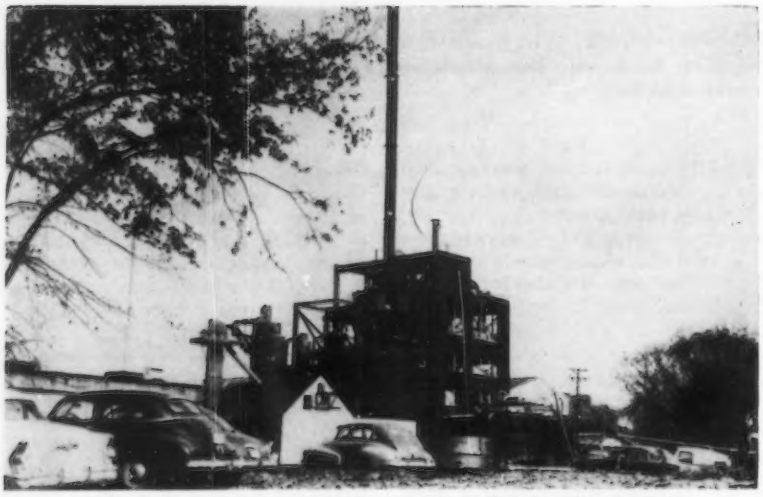


Figure 8: The 50 tons per day Mead recovery plant at Watervliet Paper Co.

Figure 9: The 200-ton Mead process commercial size recovery plant at Mead's Lynchburg, Va., mill.

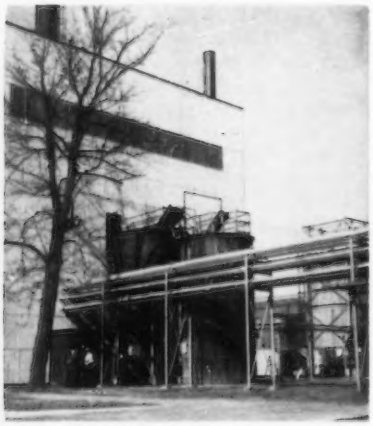


Figure 10: The commercial scale installation of the Bradley process at Consolidated Water Power & Paper Co.

proven satisfactory solution to this problem. All the proposed schemes have serious questions associated with them which must be answered. The technical picture is certainly not very clear, but far more is known about the technical aspects than is known about the economics. The cost of any of these plants is very high. A rule of thumb estimate is approximately two to three million dollars for a 100-ton plant. Much clearer pictures of the economics are needed before any one of these will be adopted.

A better idea of the cost involved can be obtained from our experience with the Zimmermann and Mead installations. Hammermill has invested about $1,000,000 on the Zimmermann plant. Figure 7 gives a picture of the plant and illustrates the cost of even a small installation. The Mead plant at Watervliet represents an investment of 1¼ million dollars. The picture shown in Figure 8 gives an idea of the size of the installation for this amount of money.[6]

It is hoped that the experimental and development work under way and planned for the near future will result in a much better picture of the merits of these various processes within the next few years. If one proves to be a commercial success, it will provide a great impetus to further expansion of the semi-chemical pulping industry. Elimination of the problems of stream pollution at a reasonable cost is a very worthwhile goal and justifies the tremendous amount of attention that is being given the subject.

This discussion has concentrated on the spent pulping liquor problem. However, another problem looming ahead must be mentioned. This is the disposal of bleach plant effluents. These are being studied by the National Council for Stream Improvement and many others, but present a very difficult area for pollution abatement. It is a problem which must be solved if production of bleached neutral sulphite semi-chemical pulp is to grow in the future.

We would like to acknowledge the help and information provided by the various individuals closely allied with these developments. In particular we recognize the assistance provided by F. J. Zimmermann of Sterling Drug Co., W. J. Darmstadt of Babcock & Wilcox Co., E. H. Kennedy of Combustion Engineering, Inc., W. H. Gauvin of the Pulp and Paper Research Institute of Canada, G. K. Dickerman of Consolidated Water Power and Paper Co., Roy P. Whitney and S. T. Han of the Institute of Paper Chemistry.

[6] In comparison, Mead built its Lynchburg plant at a $3 million cost. (Fig. 9). Consolidated Water Power and Paper has invested three-quarter million in its recovery plant. (Fig. 10).

QUICK-REFERENCE TABLE TO POSSIBLE NSSC RECOVERY SYSTEMS

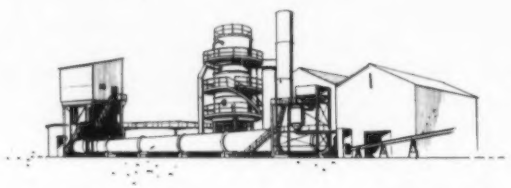
In this synopsis, only those recovery processes which have at least progressed to the pilot plant stage, and perhaps beyond to commercial operation, are discussed.

SYSTEM	Black Liquor Treatment	Removal of Organic Matter		Method of Converting to Na_2SO_3	Gas Recovery	Salient Features
		Method	Na remaining as:			
MEAD (Babcock & Wilcox Corp.)	Concentration	Combustion	Na_2S Na_2CO_3	Carbonation Sulphitation	H_2S from carbonation burned in recovery furnace. Resultant SO_2 used for sulphiting.	All CO_2 used in carbonation is obtained from furnace flue gases. There is a direct reaction of SO_2 with Na_2CO_3 to result in Na_2CO_3.
SIVOLA (Combustion Engr. Co.)	Concentration	Combustion	Na_2S Na_2CO_3	Carbonation Sulphitation	H_2S from carbonation burned together with makeup sulphur. Resultant SO_2 gas used in sulphiting.	Only pure CO_2 (incl. some from digester relief) obtained from reaction of $NaHSO_3$ with $NaHCO_3$ is used for carbonation. $NaHCO_3$ with $NaHSO_3$ to produce Na_2SO_3 half of final cooking liquor is returned to sulphiting tower to produce $NaHSO_3$. Latter is then reacted with $NaHCO_3$ from carbonating tower to produce the Na_2SO_3 and CO_2.
STORA KOPPARBERG	Concentration	Combustion	Na_2S Na_2CO_3	Carbonation Decarbonation	H_2S from carbonation is reacted with SO_2 to result in liquid sulphur.	Decarbonation involves reacting Na_2CO_3 and $NaHCO_3$ with $NaHSO_3$ to produce Na_2SO_3 and CO_2 (for carbonation). Claus reaction of H_2S and SO_2 is unique to this system.
INSTITUTE OF PAPER CHEMISTRY (B. & W. Corp.)	Concentration	Combustion	Na_2S Na_2CO_3	Sulphitation	H_2S from sulphitation can be burned, either in furnace or sulphur burner, to recover SO_2.	Simplest, as it only involves burning and sulphiting of smelt solution. No sulphur recovery. SO_2 for sulphiting produced from sulphur makeup.
ZIMMERMAN (Sterling Drug Co.)	Mixing with compressed air	Oxidation under elevated temp. & pressure.	Na_2SO_4	Reaction with SO_2 and $CaCO_3$ (limestone).	Noncondensible gases, mainly N_2, CO_2 and steam drive compressors.	Method of oxidation is often referred to as the "submerged combustion" or "flameless wet combustion" processes. No sulphur recovery. SO_2 for absorption is produced from makeup sulphur.
GAUVIN (Pulp and Paper Res. Inst. of Can.)	Concentration	Pyrolysis in absence of air.	Na_2CO_3	Sulphitation (SO_2 from pyrolysis)	Gases fired, used to heat pyrolsis vessel (incl. H_2S which is converted to SO_2 and is also used for sulphiting).	Also known as Atomized Suspension Technique: liquor is sprayed onto hot walls of reaction chamber where water is evaporated and solids are pyrolized, resulting in inorganic solids and organic gases and H_2S.
BRADLEY (Western Prec. Corp.)	Mixing with Na_2S Oxidation with air at atmos. pressure Concentration.	Combustion	Na_2S Na_2CO_3	Carbonate separated in evaporator-crystallizer, then sulphited.	SO_2 from furnace flue gases is used for sulphiting.	Presence of sulphide ion (as Na_2S separated from green liquor) and oxidation suppresses formation of corrosive H_2S. Buildup of sulphides is prevented as sulphidity of smelt is always 50%, no matter what sodium:-sulphur ratios in the black liquor may be.

(Compiled by PAPER TRADE JOURNAL staff)

West End earns its position as a responsible supplier of salt cake

In 1955, with its first offering of salt cake, West End assured the Industry of an ability to meet long-term commitments based on vast natural raw material supply, ample production and storage capacity, rapid and efficient transport facilities. By unconditional fulfilment of every commitment for over 4 years, West End has conclusively demonstrated its complete reliability as a major source of highest quality salt cake. Every normal and unanticipated requirement has been met with equal ease and dispatch.



Today, with even larger facilities and a determination to maintain the reputation it has earned, West End is solidly qualified to handle any size requirement in a wide marketing area where it is a logical source of salt cake for kraft paper manufacturers. You are invited to consult with us on the over-all economics of using West End Salt Cake.

WEST END

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DIVISION OF STAUFFER CHEMICAL COMPANY

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AT ALBANY FELT COMPANY

research begins in your mill

1 *An Albany Felt sales engineer helps a customer get to the root of a basic problem.*

2 *In Albany's chemical research laboratory, Harold Hedberg, VP/Research and Development, inaugurates work on a project brought in from the field. In addition to this research center, Albany Felt Company maintains an advanced mechanical research laboratory, research facilities at St. Stephen, S.C., North Monmouth, Me., and Cowansville, Quebec, and a fellowship at a world renowned research institute.*

3 *End result of applied research — fast, trouble-free performance!*

It's at the paper mill that felt research pays off.

It begins with the Albany Felt sales or service engineer who consults with you and then relays the facts to our team of experienced designers and laboratory specialists.

This is the team that first discovered and developed the use of synthetics and chemical treatments which solve many of your critical felt problems. Working on your present requirements, they can help achieve fast, trouble-free performance.

Remember—the felts, treatments and techniques that will break tomorrow's production records are now passing their final tests "under wraps" in our testing laboratories.

Call in your Albany Felt sales engineer. Let him *show* you how Albany's research team can help you get more tons per day—more days per felt.

AF

ALBANY FELT COMPANY

MAIN OFFICE & PLANT: ALBANY, N.Y.
OTHER PLANTS: HOOSICK FALLS, N.Y., N. MONMOUTH, ME., ST. STEPHEN, S.C.; COWANSVILLE, P.Q.

NEW IDEAS FOR BETTER PAPERMAKING—FROM THE WORLD'S LARGEST MANUFACTURER OF PAPER MACHINE FELTS

AN EBASCO-BUILT PAPER MILL
IS DESIGNED TO

GROW WITH YOUR MARKET

Provision for future expansion was a major requirement for Container Corporation's new bleach kraft mill to be located at Brewton, Alabama. Ebasco was asked to engineer, design and handle the construction of this mill so that it would meet the present and future demands for food board.

The plant, now in operation, is capable of producing over 300 tons of high-quality, bleached, solid sulfate board a day, utilizing the most efficient methods of materials handling and advanced automation techniques. Ebasco engineered the plant so that all key departments can be readily duplicated and new facilities added as growth requires.

If you are planning a new mill, or wish to increase the capacity of your present facilities, call on Ebasco. Ebasco's experience in the pulp and paper industry, and reputation for uncompromising quality, can be your assurance that your new plant will be designed to meet your present needs and planned to take care of your future requirements.

For more information on how Ebasco can serve you, write for your copy of our booklet, "Engineering, Design and Construction for Industry." Ebasco Services Incorporated, Dept. O, Two Rector St., New York 6, N. Y.

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Here's proof of economy with FALK Shaft Mounted Drives

PROBLEM—For many years, a prominent Eastern abrasives manufacturer* experienced high maintenance and down-time costs, as well as excessive noise and vibration, in the operation of 19 pebble mills driven by open spur gears. Drive gears and jack shaft pillow blocks required frequent repairs or replacement, and trunnion shafts often failed, due to radial overloading of the bull gear when broken pinion teeth bottomed between gear teeth.

SOLUTION—After numerous unsuccessful approaches to these problems, the solution was found by mounting a Size 315J FALK Shaft Mounted Drive directly on the mill drive trunnion. This eliminated objectionable gear noise and vibration...greatly reduced costly down-time and loss of production...and cut annual maintenance and replacement expenses as indicated by the following figures taken from the customer's records:

Spur Gear-and-Pinion Drive		FALK Shaft Mounted Drive	
Bull Gears	$ 56	VEE Belts	$ 30
Pinions	120	FALK Shaft Mounted Drive (based on 10-year life)	70
Pillow Blocks	90		
VEE Belts	30		
Trunnion (5-year life)	100		
Annual cost	$396	Annual cost	$100
		ANNUAL SAVINGS	$296

IF OBSOLETE DRIVES ARE COSTING YOU MONEY, a change to Falk All-Steel Shaft Mounted Drives can effect important savings in money and production. Used on almost any type of machine, these compact, rugged units are establishing new standards of economy and efficiency in many industries. Specify FALK Drives on your purchased equipment...For full details, **write for Bulletin 7100.**

*Name on request

THE FALK CORPORATION, MILWAUKEE 1, WISCONSIN

MANUFACTURERS OF QUALITY GEAR DRIVES AND FLEXIBLE SHAFT COUPLINGS

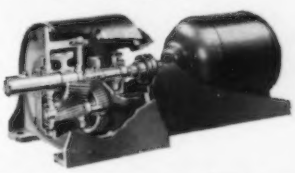
Representatives and Distributors in Most Principal Cities

To get the right drive for your application, specify FALK®

SHAFT MOUNTED DRIVES

Horizontal or vertical units—½ to 50 hp—420 to 5 rpm—single and two double reduction ratios—output torque ratings up to 41,000 lb-in (consult factory for higher torque capacity).

• • •



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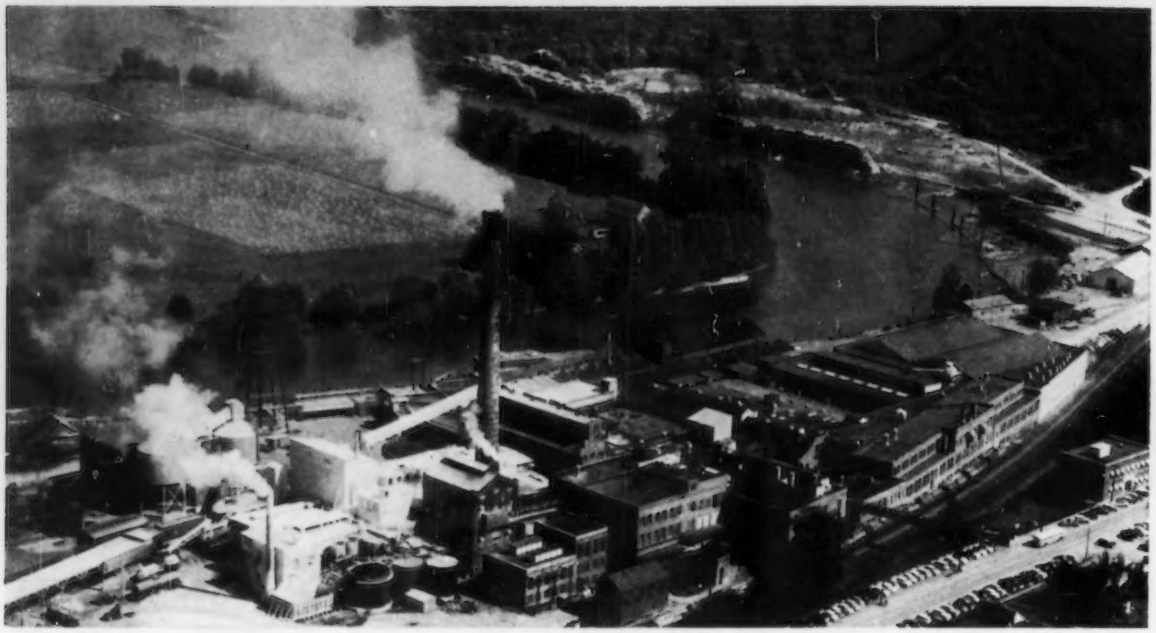
Sizes up to 75 hp—furnished with or without standard foot-mounted motor—standard output speeds 1.2 to 520 rpm (with 1750 rpm motors)—ratios as high as 54,000:1 in semi-standard designs. Integral units (gearmotor type) also available. Ask for **Bulletin 3100.**

• • •

FALK Drives are available from factory and distributor stocks from coast to coast. Consult your Falk Representative or Distributor.

FALK

...a good name in industry



New Paper Machine Increases Capacity And Flexibility at Simpson

A singular salute from industrial and business neighbors and suppliers was accorded Simpson Paper Co. on May 29th when the Everett (Wash.) Daily Herald published a special edition on the theme "Simpson Grows in Everett." Consisting of 48 pages in four sections and utilizing its full-color reproduction facilities, the newspaper paid special tribute to the community's oldest continuously operated industry with particular emphasis on recent modernization and expansion programs involving investments in excess of four million dollars. The entire edition was printed on a modified mimeo-bond paper produced by Simpson especially for the occasion.

Prominently featured were pictures and articles on the completely new, modern high-speed paper machine installed by the Everett plant recently. Designated by Simpson employees with a name of particular Northwest flavor, The Royal Chinook, the new machine replaced the company's largest No. 3 paper machine which had been installed in 1926. That machine was completely dismantled and removed and the modern equipment erected in the three-story brick building in a record time of only 47 days. The Howard S. Wright Co. of Seattle was general contractor in charge of the physical removal of the old machine and erection of the new equipment furnished by the Beloit Iron Works of Beloit, Wis., as prime supplier.

Personnel Involved

Simpson's production and enginering staffs together planned the project and accomplished the general design work. Participants, in addition to M. W. Olson, resident engineer, and his senior project engineer, John Gould, included W. A. McKenzie, formerly resident engineer and now general manager of Simpson Engineered Wood Products Co., H. R. Russell, paper mill superintendent, and F. R. Hamilton, director of research and product development. Detailed engineering drawing was done by H. A. Simons, Ltd., as consulting engineers for the project. D. F. McCall is vice president and general manager of the paper company and P. F. Peterson, plant manager.

Established in 1891, the company was formerly known as the Everett Pulp and Paper Co. prior to its purchase in 1951 by the Simpson Timber Co. of Seattle. W. G. Reed is chairman of the board of the parent company and T. F. Gleed, president.

Wet End of New P.M.

A battery of 15 Bauer centrifugal cleaners precede four Black-Clawson Selectifier screens and a Beloit pressure headbox. The latter replaced the open headbox used on the former machine.

The Royal Chinook is capable of a speed of 1500 f.p.m., twice that of the old machine. The 155-inch-wide fourdrinier wire has an overall length of 105 feet, 8 inches.

Immediately following a regular suction press, an inverted suction press has been added to reduce the tendency toward two-sidedness by

withdrawing excess water from both sides of the sheet rather than just from the underside as formerly.

Dryer Section and Hood

A new breaker stack has been installed between the first two dryer sections and a new size press is located between the second and third dryer sections. The latter is immediately preceded by one of the former machine's calender stacks, completely rebuilt to conform to the greater speeds and size of the new machine. This stack provides a smooth surface finish, prior to the application of sizing or coating.

Additional drying capacity required by the faster operating speeds demanded an increase in overall machine length to 270 feet to accommodate forty-eight 60-inch dryers in lieu of the 31 on the replaced machine. First and second dryer sections are totally enclosed by Ross-Hooper insulated aluminum hoods. Designed specifically for production of highest quality book, writing, offset and label papers, it is the only machine of its type on the Pacific Coast with fully-enclosed dryers. The sides, which extend to the floor and permit faster drying and more accurate moisture control, are both automatically and manually operated.

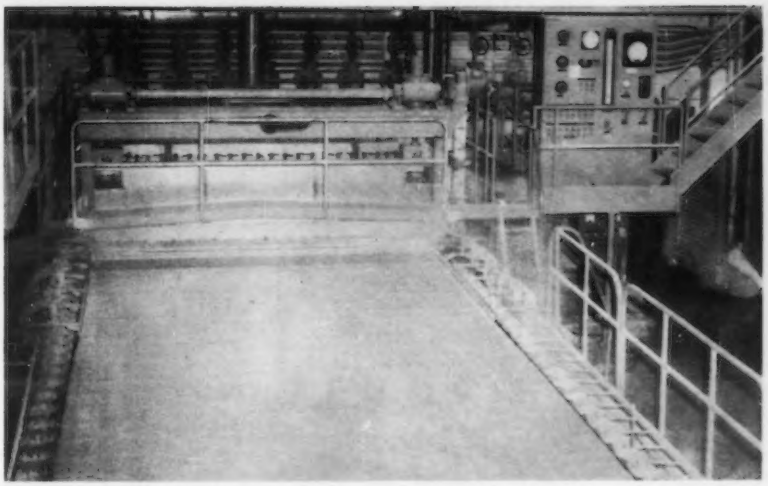
Machine Drive

The machine is powered by a single 1,000-h.p. General Electric turbine transmitting energy through a Beloit differential lineshaft drive to 11 takeoff points controlling the various sections of the machine.

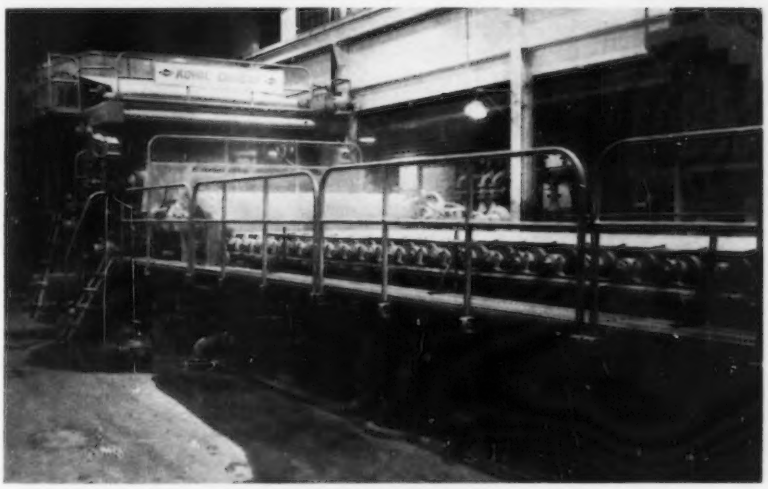
Automatic control of the drives as well as attendant operations of the machine itself is accomplished through a pneumatic control system and photo-electric cells. Electrical installations were accomplished by Rogers Electric Co. of Everett in conjunction with plant electricians under the direction of Harold Thoreen, chief electrician, along with Simpson's electrical engineer. Subcontractor for piping was the Haskell Corp., also of Everett.

Rewinding and Broke System

The limitation in the length of the building erected originally to house the old machine required that the Cameron slitter and rewinder be placed to the side of the final windup reel. This winder is equipped with a new Beloit Tru-Tension device and brake. Overhead travelling cranes swing the machine rolls in a 90-degree angle to the slitter and re-

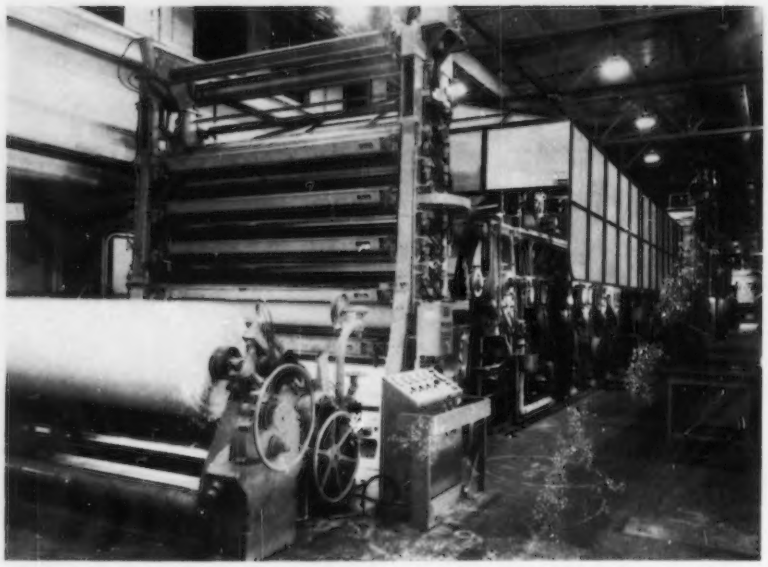


At rear of fourdrinier are control panels and pressure head box.



The wire on fourdrinier section is 155 inches wide and nearly 106 feet long.

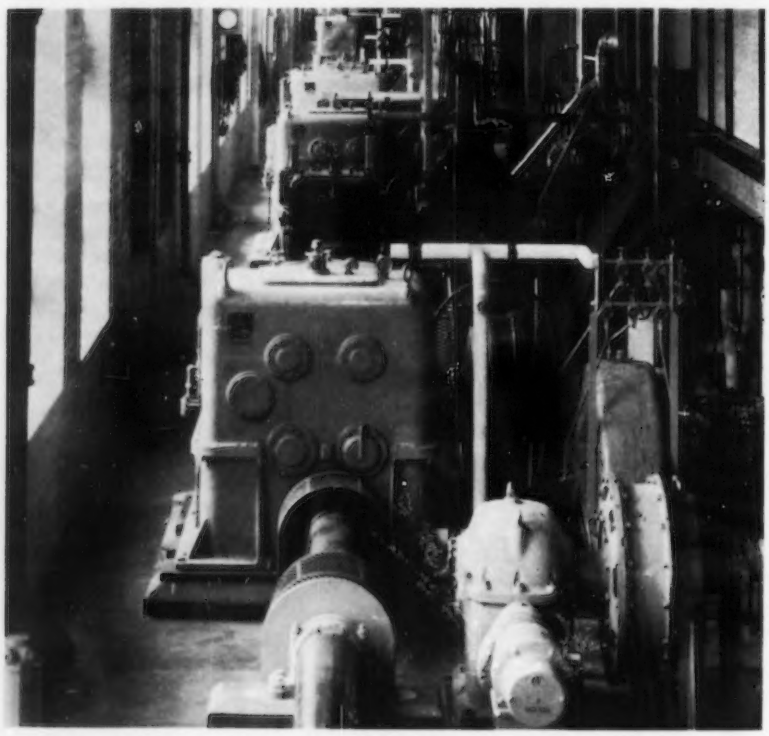
Royal Chinook has aluminum hoods fully enclosing first and second dryer sections.



The open last dryer section, calender stack and reel are prominent in this view.

winder which is installed in an opening in the machine room wall resulting in rewound rolls being delivered on the finishing room side where they are easily transportable to supercalender stacks, rotary cutters, embosser, or to Simpson's high-speed air-blade off-machine coater.

One of the first units installed for the new machine and actually erected before the old equipment was removed was a Liebeck broke pulper produced by the E. D. Jones and Sons Co. of Pittsfield, Mass. It is located in the basement of the building under the final calender stacks and reel and replaces a former conventional broke beater.



A 1000-h.p. turbine provides power for the differential lineshaft drive to 11 take-off points.

Pulp Mill Improvements

New equipment and improved processing were included in the program for the pulp mill and finishing operations in order to utilize the greater capacity and capabilities of the new paper machine. Pulp washing in the kraft bleach plant, which previously had been one of the limiting factors in production, was stepped up by replacement of older inadequate units by two 8 x 10-foot vacuum washers produced by the Improved Machinery Co.

More effective storage and increased handling capacity through more efficient high-density tank operation were achieved by the addition of agitation equipment and mining nozzles supplied by the James Brinkley Co. of Seattle. Magnetic flow meters from Foxboro Instrument Co. and consistency regulators supplied by the DeZurick Corp. for measuring and controlling pulp delivery have been incorporated in the high-density storage system and on the de-inking plant output.

The company's de-inking plant is a considerable factor in Simpson's fiber furnish to the paper mill. Additional de-inking capacity was achieved by installing two slushmakers produced by the Morden Machines Co. and enlarging and adding to associated washing equipment. These improvements have more than doubled the capacity of that section of the pulp mill and permit the input of 70 baled-weight tons of magazines per day as compared with the former 33 tons daily.

Three years ago Simpson engineers undertook a project to develop a facility for the continuous production of calcium hypochlorite used in the bleaching stages of pulp manufacturing. Utilizing equipment originally furnished by Pennsylvania Salt Manufacturing Co. of Tacoma, Simpson personnel redesigned and increased the capacity to manufacture the bleach as needed. The system, just completed last month, mixes chlorine in proper proportions to a lime slurry of appropriate consistency to produce the calcium hypochlorite in quantities sufficient to meet the needs of the pulp mill without the necessity for additional storage tanks with their attendant settling and clarifying requirements.

Wood Handling

About the same time, action was initiated to prepare chip production and handling facilities to cope with

the anticipated greater demand which a new and faster machine would create. The W. H. Rambo engineers were called upon to design a larger de-barking plant to prepare logs and wood for the chipping operation. With construction and installation under the direction of the H. S. Wright Co., a new plant was completed in November 1956 capable of feeding 40-foot logs into a 50-inch mechanical ring barker supplied by the Nicholson Manufacturing Co. of Auburn, Wash. Log haul facilities and conveyor systems supplying the barker and delivering debarked logs to splitters and chippers were fabricated by the American Boiler Works of Everett.

No. 2 P.M. Modernization

Improvements were also effected on the mill's No. 2 paper machine prior to the installation of the new Royal Chinook. About two years ago, a coating-size press was added to the older machine and an entirely new after-drying section consisting of seven additional four-foot drying cylinders installed to add to the versatility of grades which could be produced on that machine. The size press was manufactured by Rice Barton Corp. and Black-Clawson Co. supplied the additional dryers. At the same time a 440-h.p. General Electric turbine was installed for the main drive and a Morden pulper added for broke reclamation. Since the start-up of the Royal Chinook, a Pope-type reel produced by the Pusey Jones Corp. has been added to the No. 2 paper machine permitting the handling of larger rolls.

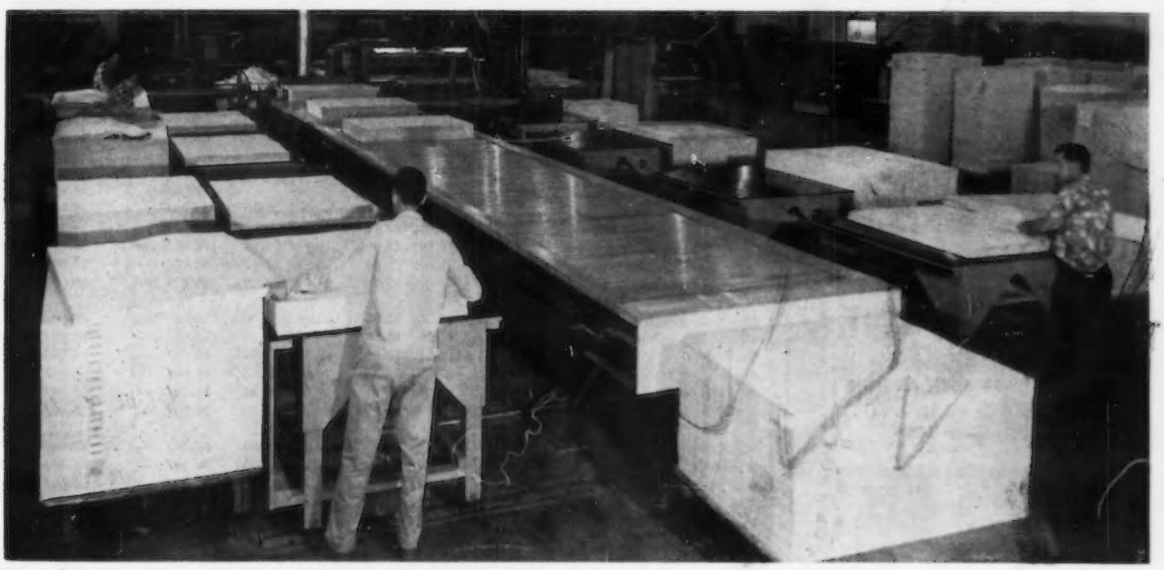
Finishing Room Expansion

The greater papermaking capacity of the plant required enlargement of finishing and shipping facilities. These were also anticipated by the addition of new equipment and provision for streamlined automatic handling of the paper as it flowed from the paper machines into the new finishing room, converting plant and warehouse which had been constructed in 1955. Two years ago an automatic high-speed rotary cutter 100 inches wide and with automatic layboy capable of handling 60 tons of paper a day was installed Two other cutters have had automatic layboys added.

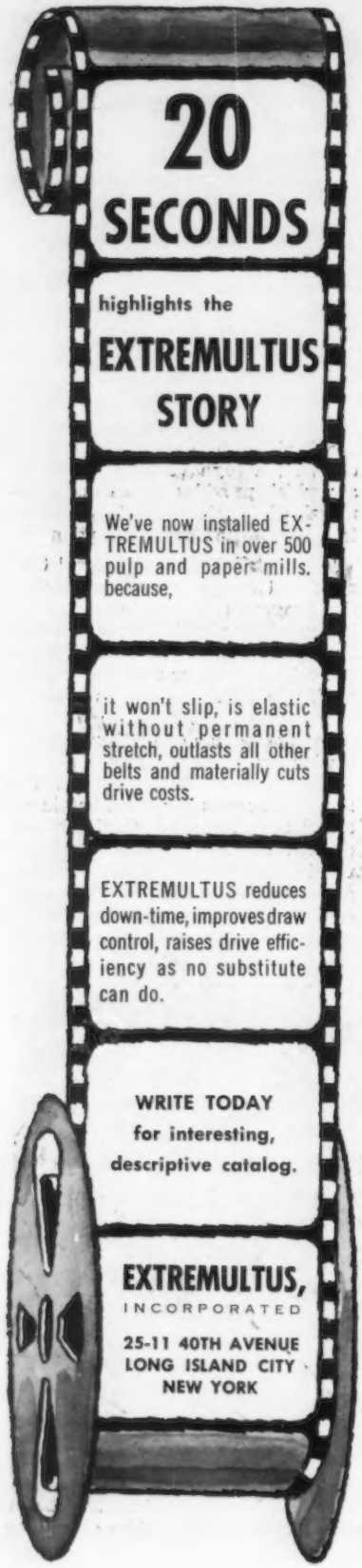
Originally two highly mechanized trimmer lines were installed in the finishing department. Just recently a third automated trimmer line was added in that department and three such lines included in the converting department for the production of small cut size reams. These three automated lines are integrated and flexible so any combination can be fed into two automatic wrappers.

The trimmers in both the finishing and converting departments are provided with sheet metal ducts carrying a high velocity stream of air which provides a pneumatic removal of the trim waste or broke to a centralized collection point.

The installation of the Royal Chinook and completion of modernization programs attendant thereto have increased the plant's average production to 140 tons of paper daily. When the old No. 3 paper machine was installed in 1926, the plant's capacity was doubled from 35 to 70 tons daily. Completion of further modernization six years ago raised this capacity to over 100 tons daily. The recent programs described herein accomplished the greatest single production increase since the original third paper machine was installed, and provide the basis for even greater future capacity and expansion when warranted by greater paper usage and growth in demand.



One of three automated trimmer lines in the finishing department. Hydraulically operated hoists, transfer tables and a long slat conveyor table feeding loads into the back of the trimmer are evident.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SECONDS
highlights the
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STORY
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it won't slip, is elastic without permanent stretch, outlasts all other belts and materially cuts drive costs.
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Prices of Fibers

MARKET WOOD PULP

SECOND QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$ 82.50/ 90.00	‡390.00/ —	‡380.00/ —	‡390.00/ —
Bleached Gw'd	$ 97.50/100.00	$ 97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	‡157.00/162.50*		‡157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		‡137.00/ —		
Kraft, Semi-bleached.	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd. .	150.00/ —				
Sulphite, Unblchd ...	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'an		140.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

‡ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED MAY 28

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	$ — /6.75	7.50/7.25
3	$7.50/6.50	$7.50/7.00	6.25/5.75	7.00/6.75
4	6.50/5.50	6.25/5.75	5.50/5.00	6.50/6.25
5	5.50/4.50	5.25/4.75	4.75/4.50	5.75/5.25
6	4.50/4.00	4.50/4.25	4.00/3.75	4.25/3.75
7	4.00/3.00	4.00/3.00	3.25/2.75	3.00/2.75

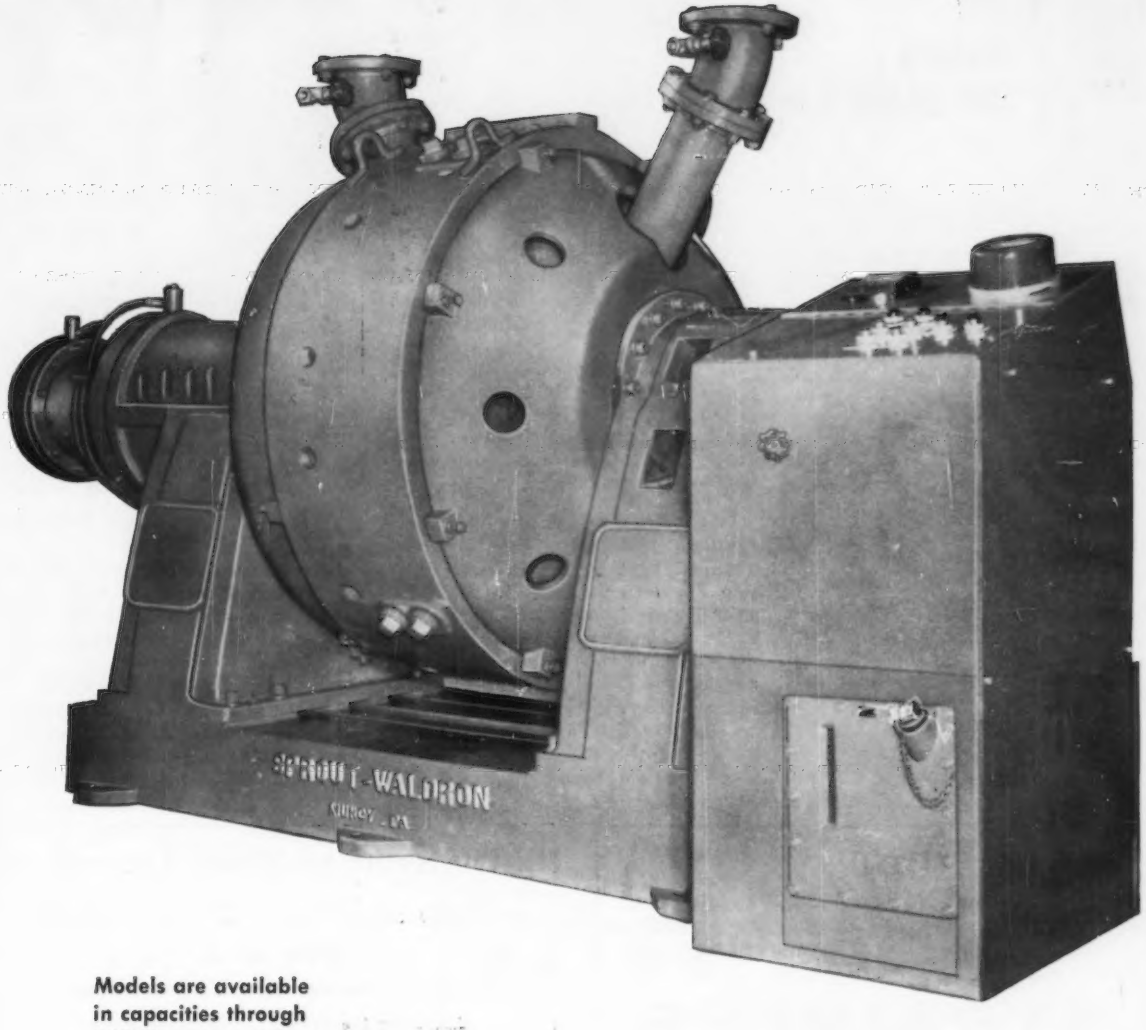
WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	June 15	June 15	June 15	June 15
No. 1 Mixed Paper	$ 10.00/ 12.00	10.00/ 12.00	9.00/ —	13.00/ —
No. 1 News	14.00/ 15.00	15.00/ —	18.00/ —	18.00/ —
Overissue News (Lg. size)	13.00/ 15.00	12.00/ 14.00	23.00/ —	20.00/ —
Mill Wrappers	19.00/ 22.00	13.00/ 15.00	14.00/ —	15.00/ —
Old Corrugated Containers	24.00/ 25.00	23.50/ 24.00	23.00/ —	23.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	35.00/ —	55.00/ —
New Double Kr. Ld. Corr. Cuts	35.00/ 37.50	37.50/ —	37.50/ —	35.00/ —
(Semi-chem. medium)	47.50/ 50.00	45.00/ 50.00	45.00/ —	36.00/ —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Unprintd ..	60.00/ 65.00	65.00/ 75.00	60.00/ —	60.00/ —
No. 1 Groundwood Shvs.	25.00/ 30.00	25.00/ 30.00	24.00/ —	35.00/ —
White Newsblanks	60.00/ 65.00	48.50/ 55.00	45.00/ —	55.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	55.00/ —	70.00/ —
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	65.00/ —	— / —
Hd. White Shvs.	85.00/ 90.00	90.00/100.00	85.00/ —	95.00/ —
Hd. White Env. Cuts	100.00/105.00	105.00/115.00	90.00/ —	113.00/ —
Col. Tab. Cards	55.00/ 57.50	60.00/ 67.00	52.50/ —	40.00/ —
Manila Tab. Cards	77.50/ 80.00	80.00/ 85.00	75.00/ —	65.00/ 70.00
No. 1 Col. Ledger	40.00/ 45.00	37.50/ 42.50	47.50/ —	35.00/ —
White Ledger	60.00/ 62.50	60.00/ 65.00	60.00/ —	55.00/ —
Mixed Book & Mag.†	25.00/ 28.00	— / —	17.00/ —	— / —
No. 1 Books‡	30.00/ 32.50	24.00/ 26.00	35.00/ —	17.00/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.



Models are available in capacities through 1200 horsepower

SPROUT-WALDRON PRESSURIZED REFINER

Write for Advance Specification Sheet No. 210

This new type stock preparation pressurized refiner is designed to produce highest quality pulp to exacting specifications. Unique parallel flow feed arrangement and self-balancing thrust assure high capacity with low operating and maintenance costs. The refining mechanism consists of a floating rotor-shaft assembly rotating between a fixed and hydraulically controlled movable head. A set of refining plates is mounted on each face of the rotor as well as on the two stationary heads. Major advantages are: mechanical simplicity; installation versatility; high production quality; simple maintenance; high production.

E 201

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SINCE 1866 REFINERS • DIGESTERS • CONVEYORS • FEEDERS • SCREENS • MIXERS • DRAINERS • FIBER PRESSES • STOCK PROPORTIONERS

NEWS OF SUPPLIERS

Koppers Co., Inc., Metal Products Division, announces the appointment of John W. Pennington as general manager of the piston ring and seal department of the division.

Mr. Pennington was graduated from Kansas State College in 1939 with a degree in mechanical engineering. From 1939 to 1950 he held various engineering positions with Caterpillar Tractor Co., Peoria, Ill. In 1950 Mr. Pennington joined Koppers as chief engineer of the piston ring department in Baltimore. He was made manager of the technical department in 1953 and manager of engineering and development for the division in 1956. This is the position he held prior to his latest promotion.

Also announced is the appointment of William B. Sawers as manager of the coupling department of the Metal Products Division.

Mr. Sawers, a native of New York City, graduated from Baltimore Polytechnic Institute in 1927 and joined Koppers immediately thereafter. He held various positions in the production department until 1933 when he was appointed assistant chief engineer of the piston ring department.

He was named district manager of the division in 1935 with headquarters in New York. In 1950 Mr. Sawers was appointed assistant manager of the piston ring and seal department in Baltimore.

Castle & Overton, Inc., has announced that Julius Rossetti will join its organization. He will be active in purchasing, sales, traffic and personnel management.

Mr. Rossetti was formerly the director of purchases of the United Board & Carton Corp. Prior to that he spent seven years as purchasing agent for the Barrett Division of the Allied Chemical & Dye Co.

Lloyd Hornbostel

E. D. Beachler

E. J. Justus

F. G. Ramsden

Beloit Iron Works, has announced that Lloyd Hornbostel will retire later this summer after 33 years of service with the company. Mr. Hornbostel's retirement has been prompted by reasons of health.

E. D. Beachler has been named vice president in charge of engineering and E. J. Justus has been named vice president in charge of research

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. . . for efficient removal and disposal of suspended particles from raw or process water and other liquids

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Embracing the Complete Lectures as given at the University of Maine.

Three hundred and seventy-three pages and an additional 4-page colored insert of up-to-date material covering a broad field in both pulp and paper making and including many fine illustrations and diagrams.

For students expecting to enter the industry who wish to increase their knowledge and improve their positions, this textbook offers a complete education in pulp and paper manufacture.

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Mr. Beachler and Mr. Justus have been closely associated with Hornbostel for many years.

Francis G. Ramsden has been named sales manager. His appointment fills the vacancy created by Donald R. Simonds' recent promotion to vice president.

Mr. Ramsden has been associated with Beloit Iron Works and the paper industry for over a quarter century.

SKF Industries, Inc., has announced the appointment of Holton E. Fox to the post of district manager, Philadelphia district sales office.

Mr. Fox, formerly a field engineer in the ball and roller bearing manufacturer's Pittsburgh district, fills a vacancy created by the appointment of Harold W. Speidel to the newly created position of manager, sales product planning.

Bolton Emerson. The picture of John L. Sigler (at right) should have appeared in our June 1st issue with the news item announcing his appointment as regional manager of John W. Bolton & Sons, Inc., and The Emerson Manufacturing Co. Division of Lawrence, Mass.

J. L. Sigler

The picture was used through a mix-up as a picture of R. M. Hatfield of Combustion Engineering, Page 54, June 8th issue.

CHAS. T. MAIN, INC.

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Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	May 9	May 16	May 23	May 30	June 6
1959	95.7	97.5r	96.3	92.4	94.1
	May 10	May 17	May 24	May 31	June 7
1958	87.2	87.9	85.7	81.3	82.2

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	87.8	90.5	93.2‡	94.4‡	95.5‡	—	—	—	—	—	—	—	—
1958	86.9	89.5	89.5	88.4	87.2	87.2	75.3	89.6	86.5	91.6	90.4	93.1	87.1

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1952	1953	1954	1955	1956	1957	1958	1959
Year to Date	94.0	94.2	93.6	95.9	101.4	94.8	87.2	92.2
Year Average	88.6	92.3	91.6	94.0	97.9	90.9	87.1	—

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	May 9	May 16	May 23	May 30	June 6
1959	94	96	95	97	88
	May 10	May 17	May 24	May 31	June 7
1958	86	87	85	83	77

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	86	93	95	93	96	—	—	—	—	—	—	—	—
1958	80	86	88	84	84	86	76	93	90	95	92	81	86

† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING June 6, 1959	LAST WEEK ENDING May 30, 1959	CUMULATIVE TO DATE Jan. 1 to June 6, 1959
% Activity	88%	97%	93%
TOTAL	295,007	326,467	6,786,362
Liner	105,114	113,709	2,320,917
Corrugating Material	43,641	47,725	1,026,600
Chip & Filler Board	5,378	6,434	113,613
Total Containerboard	154,133	167,868	3,461,130
Folding	51,079	60,326	1,257,514
Set-Up	9,154	11,946	258,173
Special Food Board	29,169	28,107	631,502
Other	51,472	58,220	1,178,043
Total Boxboard	140,874	158,599	3,325,232
Total Orders			
Received	348,856	350,614	
Unfilled End of Week	548,933	497,831	

Tales of the Paper Industry: No. 3

The Egyptian mummies that wound up as wrapping paper

I. Augustus Stanwood was a character! He was also a man who liked to make money. During the Civil War, Stanwood was hard-pressed for raw material to keep his Maine paper mill operating. So, he imported Egyptian mummies and converted their shrouds into paper. But, the mummies brought something else with them, too; an epidemic of cholera!

It's interesting to note that the only objection raised to Stanwood's venture came from the Egyptian railroad. For during that period, the railroad was using the mummies for something else. FUEL! The moral of the story: *solving a problem the wrong way is sometimes unhealthy.*

If you have the problem of buying pipe or tubing for paper mill applications, National Tube would like to help you make the decision. Our trained Mill Service Force will gladly make a careful study of your requirements, and then recommend the best, most economical pipe for the job. These men are available for field consultation. And their advice won't cost you a thing.

National Tube manufactures seamless pipe and tubes in a complete range of steel analyses from low carbon through the alloys up to and including stainless steel. A wide variety of sizes and wall thicknesses is available for every mechanical and pressure requirement. Plan now to contact National Tube Division, United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

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Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors
United States Steel Supply Division · United States Steel Export Company, New York

NEW LITERATURE

Lever Hoist
Safety Chart

Illustrates safe handling of lever operated hoists. This chart was specifically designed for use as a poster to aid industry in the promotion of safety. Manning, Maxwell & Moore, Inc., Muskegon, Mich.

Kure-N-Seal for
Concrete Surfaces

Contains application and test data for curing, sealing and dustproofing newly poured concrete surfaces in one operation. Brochure BP 1071. L. Sonneborn Sons, Inc. Building Products Div., Dept. K, 404 Fourth Ave., New York 16, N. Y.

Weight Feeder
Machines

Illustrates and describes their "diminishing batch" weight feeder machines designed for the accurate feeding of dry chemicals required in water filtration and in chemical and food processes. Bulletin. Syntron Co., Homer City, Pa.

Resistance Temperature
Elements

Illustrates and describes resistance elements for measurement of temperatures to 1200 F. under pressures to 4500 p.s.i.g. Also provides graphs showing limitations of protecting wells and leadwires. Product Specification E51-6. Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio.

Morris CK
Solids Pump

Provides capacities and ranges of this solids pump designed to handle fluids containing random size solids and highly abrasive materials. Bulletin 189, Morris Machine Works, Baldwinsville, N. Y.

Link-Belt
Vibrating Screens

Describes and illustrates each of 12 different types of screens and foundry shakeouts as they are used to meet screening and shakeout needs of practically every industry. Also contains accessory information. Book 2777. Link-Belt Co., Dept. PR, Prudential Plaza, Chicago 1, Ill.

Recording Voltmeters
and Ammeters

Describes one, two and three-pen instruments in wall-mounting, panel-mounting, portable and pole-mounting models. Also explains operating principles and includes a list of charts and accessories for use with the intruments. Bristol Co., Waterbury 20, Conn.

S-W Bucket
Elevators

Includes a complete table of dimensions and specification on aluminum, wood, steel and stainless steel bucket elevators. Bulletin 22-D. Sprout-Waldron & Co., Inc., 130 Logan St., Muncy, Pa.

Three-Element Feed
Water Control Systems

Presents installation photographs along with chart reproductions showing constant drum level under varying load conditions. Also includes typical diagrammatic drawings, principle of operation and advantages of this system. Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio.

Bailey Multi-
Pointer Indicator

Illustrates and describes this compact group of individual miniature vertical gauge units. Product Specification P11-1. Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio.

Betz Fuel Oil
Sludge Solvent

Tells how Betz Fuel-Solv eliminates, by chemical means, many of the difficulties encountered in the use and handling of residual fuel oils. Bulletin 594. Betz Laboratories, Inc., Gillingham & Worth Sts., Philadelphia 24, Pa.

OBITUARIES

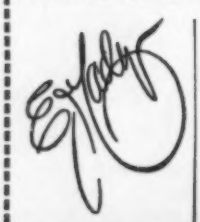
Vernon H. Hale, 60, an employe of the Great Northern Paper Co., Millinocket, Me., for 40 years, died suddenly in late May.

At the time of his death, he was paper mill superintendent at the Millinocket mill.

William H. Ford, 60, died suddenly at his home in LaGrange, Ill., on June 1st as the result of a heart attack.

Mr. Ford was director of purchases for the Lloyd A. Fry Roofing Co. and Volney Felt Mills Division since August 1, 1943.

Albert D. Merrill, 73, president and treasurer of the Chemi-pulp Process, Inc. of Watertown, N. Y., consulting engineers in the pulp industry, died June 7th. Mr. Merrill had been actively identified with the chemical pulp industry both in the United States and Canada for many years.



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This precision instrument gives direct-reading thickness measurements of Papers, Tissues, Plastic Films, Foils . . . any sheet stock up to .050" thick. P.S.I. pressure meets ASTM and TAPPI Standards. Write for complete data and prices for this and other Cady Instruments.

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STRUCTURAL AND ARCHITECTURAL DESIGN
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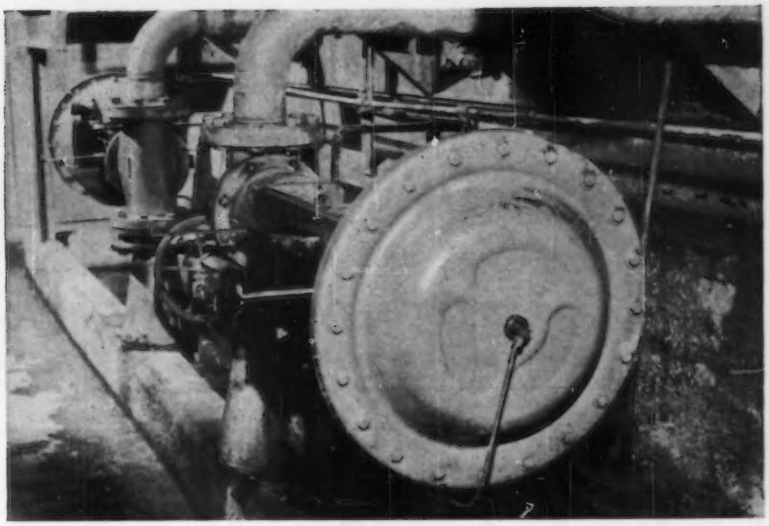
Found:
a valve responsive to sensitive instrument control, with low maintenance



Grinnell-Saunders Straightway Diaphragm Valves on back of Trimbey meter on Mead Corporation's No. 10 paper machine.

Grinnell-Saunders Straightway* Diaphragm Valves were originally selected by Mead Corporation for stock level control at its Chillicothe, Ohio paper making plant. Mead's instrumentation specialists wanted a valve which would provide fine control in response to sensitive instruments.

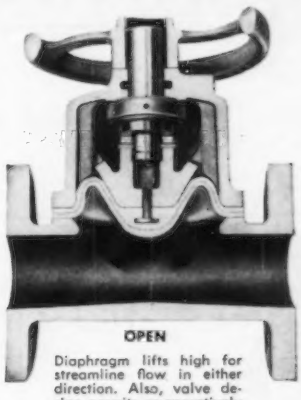
Because these Straightway Valves also avoid difficulties from clogging, stringing and dewatering as well as leakage, plugging, sticking and erosion, they have since been specified for other services throughout the plant.

Grinnell-Saunders Straightway Diaphragm Valves solve tough problems in many piping systems. They provide special benefits in lines handling corrosive fluids, viscous material, fibrous slurries, sludges, solids in suspension and semi-fluid materials.

These highly efficient valves provide streamlined flow, positive closure, complete isolation of operating mechanism, minimum maintenance, interchangeability of parts, manual or power operation, and a choice of body lining and diaphragm materials.

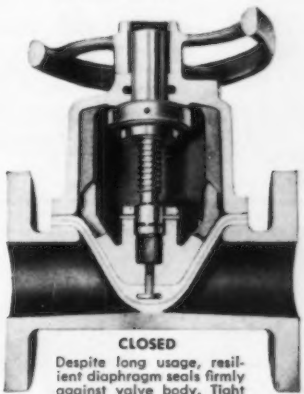
For complete information on straightway or standard weir types, handwheel, lever, or power operated, write Grinnell Company, Inc., 277 West Exchange Street, Providence 1, Rhode Island.

*PATENTED



OPEN

Diaphragm lifts high for streamline flow in either direction. Also, valve design permits comparatively simple rodding through, when necessary.



CLOSED

Despite long usage, resilient diaphragm seals firmly against valve body. Tight closure is assured, even when handling gritty or fibrous materials.

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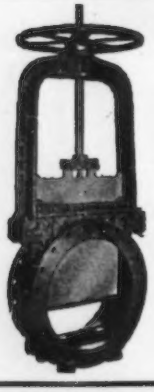

RECORD PAPER & PULP STOCK VALVES "BONNETLESS"
SELF CLEARING - - - "RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M. all iron, bronze or stainless steels, body parts plain or rubber lined.

The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

• The "FAST THREADED" screw stem and ball bearing speeds valve operation.
• The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.
• The yoke mountings are such that yokes for various methods of gate operation are interchangeable.
• Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

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Small growing company manufacturing a specialty board product in fast increasing demand wants a superintendent for its two machine mill in the New York area. Should be experienced paper (or board) maker preferably with technical training and qualified for advancement to become Vice President of Production.

Give full particulars of education, experience, salary now and wanted. Present production staff knows of this advertisement. All replies treated in confidence. Address Box 59-186 care Paper Trade Journal.

J-6

PAPER MILL ENGINEER

Graduate, with all-around pulp and paper engineering and drafting ability. For substantial and progressive pulp and paper mill consulting and design organization. This position is what you make it. Confidential.

C. W. CASSELL & ASSOCIATES

211 North Fourth Avenue
Ann Arbor, Michigan

J-29

Help Wanted

Mid-West Paper Mill Planning Expansion

Positions available with following qualifications:

Plant Superintendent—

Three or more years as assistant superintendent or technical assistant to superintendent in manufacture of paper. B.S. degree in chemistry or engineering.

Plant Engineer—

Five or more years' experience in paper or paper converting. B.S. in industrial or mechanical engineering.

Converting Superintendent—

Three to five years' experience in supervision. B.S. degree in industrial engineering.

Technical Salesman—

Five years' experience selling in paper industry. Degree in chemistry or chemical engineering.

Please send resume of experience, education, age, availability and expected salary to Box 59-187 care Paper Trade Journal.

J-22

Pulp and Paper Mill is looking for an engineer under 45 years of age with a B.S. degree in Mechanical Engineering and a minimum of 5 years of experience. He should have experience in the supervision, administration and planning of maintenance employees in a fully integrated pulp and paper mill.

This engineer is to be in charge of all area maintenance foremen and will be responsible to the Plant Maintenance Superintendent.

Please send resume including education, experience and salary requirements. Write Personnel Manager, American Box Board Co., Filer City, Michigan.

J-29

CHEMICAL ENGINEER

Graduate Chemical Engineer for new engineering and development work. Job will require some travel to operating units in North America. Will be located in Southeastern U. S. A.

Applicant must have experience in sulphite pulp process. Experience in recovery of by-products in sulphate and sulphite processes desirable. Age up to 40 years. Good salary and advancement opportunities. Organization has no chemical engineers and is now entering chemical manufacturing field. Our employees know of this ad. All replies treated in confidence. Submit detailed resume to: Box 59-156, care Paper Trade Journal.

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1—60" 4 color Schmutz Press. Suitable for Multi-Wall Bag Printing
1—54" 1-color Rotogravure Press
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2—33" 6-color Cottrell-Heinrich Flexo Presses
1—30" 4-color Hudson-Sharp Press (Central Impression Cyl.)
1—30" 4-color H-S Flexo Press
1—23" 2-color Manhasset Flexo tail printer
1—18" 2-color Potdevin (Model-217) Roll to Roll Press
1—10" 4-color Roto Press
2—New Era Presses; —9" x 12"

POWER PAPER CUTTERS

Seybolds: 1—44" late model Seybold Model P4460 New 1952; Dayton—84" & 35"; 20th Century—44", 54" & 38; Holyoke —55"; 10Z—50", 44"; 7Y—34"; 3Y—32". Oswegos: 57" 44", 38" & 32". Sheridans: 40" & 36". Dexters: 50", 44" & 32". C & P: 44". National: 44".

CAMACHINES

1—82" 10-10
1—72" 10-11
1—72" 10-10A
1—72" 10-04 Shear Cut
1—62" 26-2A with 100 score cutting units
1—62" 40-1-AF
1—62" Type 42"
1—52", & 1—42" Model 24-7
1—42", 50" & 62" Type 6

OTHER SLITTERS

1—106" Langston (60" Diameter Rewind)
1—82" Langston Type B
1—60" Langston Type A
1—36" Kidder SLN (Shear Cut)
30" Fales Model B Slitter and Rewinder
2—24", 1—30", 1—36" & 1—40" Kidder S.L. Shear cut

MISCELLANEOUS MACHINES

1—79" Moore & White Sheeter with 10 roll backstand and motor
1—45" CCSH-5 Beck with Auto Piler
1—45" CSH Beck Sheeter, Jogger Delivery.
1—30" Peters Sheeter, Model UD
1—36"-45" and 1—55" Globe sheeters
Hamblet Sheeters; 32", 45", 76", 90" & 104"
1—81" Dietz "Facial Roll" Toilet Converter (1954)
1—Lawton Mod. "A" Jr. Toilet Roll Wrapper
4—62" 25W H-S Roll Winders
2—60" Potdevin Squeeze Roll Waxers
1—60" Hot Melt Coaters & Laminators
1—46" Reverse Roll Coater
1—42" International Model R.W. Carton Waxer
1—30" Double Reverse Roll Coater
1—Beasley French Bag Machine. Range: (2" x 2¾" to 6" x 13⅜")
2—Potdevin (Model 111-S) F & S Cello Bag Machine, Electric Eye
1—Potdevin Model 72-C Cellophane satchel bottom bag machine
1—Potdevin Model 296 Duplex Coffee Bag Machine
1—#4 & 1—#5 Potdevin Diamond Shaped Bottom Sack Machines
1—7-GW Weber Self Opening Sack Machine
1—Weber Model "CN" Cellophane Satchel Bottom Bag Machine
2—Po-2 Roto Polyethylene Bag Machines
2—Hayssen 4 roll Toilet wrappers
1—48" Unicraft Embosser
2—Hudson Sharp Napkin Machines, with embossing attachments; 1 — 3 Deck (No Printer), 1—2 Deck with 2-color printer.
3—Seybold—4—Post Die Presses 38" x 24", 44" x 30", 48" x 31" & 59" x 32"
3—Sheridans; 66" x 44" & 44" x 22" & 32" x 18"
1—80" Simpco Die Cutting Press
1—Package Machinery Co.'s Traymaster Carton Gluer Model TL-100A
1—36" 2 color Dutro Converter Score Type Slitter

J-22

PAPER—COATINGS CHEMIST

Excellent opportunity for man with degree or comparable experience in paper chemistry. Position involves Development work and technical service on materials used in paper. Experience and knowledge of coatings preferred. Fully equipped, air conditioned laboratory. Starting salary commensurate with experience. All replies treated in a confidential manner. Submit resume to Mr. Hubert Guy, Technical Director, Koppers Company, Inc., Box 65, Monaca, Penna.

J-22

PAPER MILL is looking for a GRADUATE ENGINEER, under 45 years of age with a B.S. degree in Electrical Engineering and a minimum of 5 years experience in Plant Electrical Engineering. This man should have experience in medium voltage generation and distribution and low voltage distribution. He must have a good working knowledge of medium and low voltage motor control. Some experience in industrial lighting is also desirable.

This engineer is to have complete charge of all plant electrical maintenance in a plant that generates 20,000 KW of its own power and distributes it to departmental processes ranging from wood processing to three paper machines. He will be responsible in this position to the Plant Maintenance Superintendent. Please send resume including education, experience, and salary requirements. Write Personnel Manager, American Box Board Co., Filer City, Mich. J-29

CHEMICAL ENGINEERS

Bowaters Southern Paper Corporation

South's largest Newsprint Manufacturer has permanent positions available for Chemical Engineers. Mill's Technical Staff now being enlarged because of extensive expansion program. Degree in Chemical Engineering from accredited college required. Minimum of two to five years experience in Kraft and/or Newsprint Mills essential. Starting salary based on qualifications with periodic merit increases. Complete insurance, retirement and vacation programs established. All replies will be answered and treated in confidence. Reply immediately submitting summary of experience to:

Industrial Relations Department
BOWATERS
SOUTHERN PAPER CORPORATION
Calhoun, Tennessee

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POWER PLANT ENGINEER

Graduate Mechanical or Electrical Engineer for new engineering and development work. Job will require some travel to operating units in North America. Will be located in Southeastern U. S. A.

Applicants must have experience with high pressure turbo-generators and boilers. Hydro-electric experience desirable as well as test course experience with manufacturer of electrical or steam equipment. Age up to 40 years. Good salary and promotional opportunities. Our employees know of this ad. All replies treated in confidence. Submit detailed resume to: Box 59-157, care Paper Trade Journal. TF

ESTIMATING ENGINEER

Familiar with paper machine designs and costs. Apply with full details including experience and salary requirements. Our employees are aware of this ad.
WRITE BOX 59-178 care Paper Trade Journal. J-22

MAN FOR INDUSTRIAL PLANT

Technical training in Sanitary and Chemical Engineering. Experience preferred, but not necessary. Salary open.
Send resume to Personnel Director,

Hamilton Paper Company
Miquon, Pennsylvania J-13

PAPER MILL SUP'T.

Take full charge of 1 Yankee Fourdrinier machine running facial tissue. Must have experience. Reply stating experience, age and salary expected to Box 59-185 care Paper Trade Journal. J-13

WANTED

DESIGN ENGINEERS
with pulp mill machinery experience.
Salary Open
Write to: Chief Engineer
The Black-Clawson Company
Pandia Division
Hamilton, Ohio J-6

BARGAINS

IMMEDIATE DELIVERY

1—128" 8 & 5 10-Roll Calender Stack. King Roll 24" Dia. Heavy box frames, full set of doctors. Excellent Condition.
1—86" Farrel 3-Roll Calender Stack. Anti-friction Bearings. Excellent Condition.
26—36" x 72" Complete Dryer Section, Stack, Drives, Etc.
10—48" x 150" Pusey & Jones Dryers.
1—84" Kamyr Machine, Complete. 75 ton per day output.
1—E. D. Jones Majestic Jordon No. A-482. New S.S. Fillings. Like New.
1—E. D. Jones Imperial Jordon, S.S. Fillings
1—Noble & Wood Mammoth Jr. Jordon, S.S. Fillings
1—Monarch Jordon, Model SP, Serial #21095, no fillings. Direct connected to a 75 H.P. G.E. 400 RPM Motor.
1—No. 3 Jones Pulpmaster, Late Type. Complete Drive.
1—Dilts #1 Hydrafiner, Anti-friction Bearings.
1—45" Seybold-Dayton Trimmer and Cutter with 5 H.P. 220/440 Volt Motor.
1—A.P.P. Rotary Centrifugal Pulp Screen, 40" Dia. x 42" Face. Serial #1274227. Like new. Capable of 40 ton groundwood pulp per day.
1—Trimbey Senior Rotary Screen.
2—Impco Rotary Pulp Screens.
3—No. 3 Impco Rotary Knotter Screens. S.S. Plates.
1—110" Pusey & Jones 2-Drum Winder. A.F. Bearings.
1—Hudson Sharpe Toilet Tissue Converting Machine. Ser. #2123. 8 Spare Mandrel Bars.
1—42" Dia. x 110" Face Pope Type Reel. Excellent Condition.
1—25" Dia. x 156" Face Sandusky Suction Couch, Bearings & Stands.
1—22" Dia. x 138" Perforated Face Sandusky Suction Couch, Bearings & Stands.
1—10-Knife Carthage Chipper with Anti-friction Bearings.
1—54" Dia. x 48" Face Valley Iron Tub Beater.
1—Dilts 53" Dia. x 60" Face—2000 lb. Iron Tub Beater. S.S. Extractor Type Hood.
1—Seybold Knife Grinder. Size G. 84" Table. Serial #4X802.
1—Sandy Hill Sulphur Burner. Complete.
2—#2 Bird Screens with Copper Vats & S.S. Plates.
1—Tugboat Annie Pulper.
1—Worthington Air Compressor, Model STR2, 2-Stage, Air Cooled. 5 H.P.
1—C.P. 12 x 10 Air Compressor, 100# Pressure.
1—I.R. 7 x 7 Air Compressor, 100# Pressure.
1—No. 244 Mattison 18" Core Cutting Saw—5 H.P. 3450 RPM, 3/60/220-440 volt.
1—90 H.P. Terry Turbine, Type G-4000/1000 RPM. For Paper Machine Drive. Complete.
1—No. 2 Jones Pulper. A.F. Bearings. Spare Worm.
1—36" Putman H.D. Lathe—15' Centers.
1—24" x 6' L & S Geared Head, H.D. Machine Lathe. Taper Attachment, Hollow Spindle, Motorized.
1—A.C. 75 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—A.C. 40 H.P. 3/60 220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—G.E. 100 H.P. MG Set, 250 Volt D.C.
1—250 H.P. Ingersoll Rand Diesel Engine Generator Set—G.E. Generator, 150 KW, 480 Volts, 720 RPM.

Save over 50% on your requirements for New Jordon Fillings. S.S., Bronze & Carbon Steel.

Gear Reducers, P.I.V. Drives, Generators, S.S. Pumps, Stock Pumps, Plunger Pumps, Etc.

1000 Electric Motors from ¼ H.P. to 600 H.P. in Stock.

The above is but a small part of the inventory we carry. We can furnish you with almost anything in the line of paper mill, electrical and machine shop equipment.

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Telephone 333-334

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BARKING DRUM
1—12 ft. diameter x 45 ft. long

BEATERS
2—1500 lb. rag beaters, Valley Iron, bandless rolls, 54" x 48", cast iron tubs

CALENDER STACKS
1—3 roll 84" calender stack.
1—4 roll 72" Calender Stack. (Extra heavy duty).
1—5 roll 82" face.
1—5 roll 86".
1—7 roll, 84" face.

CHIPPERS
1—96" Murray 4 knife Chipper—anti-friction bearings.
1—84" 10 knife Carthage Chipper. Anti-friction bearings, with motor.
24—Chipper Knives 15⅛ x 3¼, 2 slot.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
1—Williams Hammermill
1—Jeffrey Shredder

CYLINDER MOLDS
3—42" diameter x 106" face
7—36" diameter x 94" face, hollow shafts, Very good condition.
1—30" diameter x 72" face.
1—30" diameter x 92" face.
1—36" diameter x 82" face
3—36" diameter x 90" face, 18" diameter couch rolls.
2—60" dia. x 170" face

DIGESTERS
1—10' high x 5' dia. High pressure vertical digester.

DISINTEGRATOR
1—Shartle 8" disintegrator (new) with 125 horsepower induction motor. (totally enclosed)

DRIVES
1—Rice-Barton hypoid enclosed drive, 4 to 1 ratio.
1—#6 Reeves vertical—anti friction bearings, totally enclosed.
1—Sandy Hill right angle 50 H.P. (4.75 to 1).
1—Jones 21 H.P., ratio 10 to 1 (enclosed angle drive)
1—#4 Reeves Drive
2—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 H.P.)
1—5 H.P. Reliance Drive, complete with starting equipment, like new.
1—20 H. P. U. S. Varidrive
1—Agitator drive
1—400 h.p.—Westinghouse Drive

DRYERS
4—24" diameter x 80" face, Lukens High Pressure Dryers, anti friction bearings.
1—28" diameter x 84" face
2—30" diameter x 40" face with bearings
2—30" diameter x 48" face with bearings.
4—48" dia. x 52" face with frames, gears, bearings
1—36" diameter x 44" face
3—36" diameter x 76" face.
5—36" diameter x 84" face and gears
1—16" diameter x 54" face (steel)
1—48" diameter x 118" face
6—48" diameter x 130" face.
1—48" diameter x 92" face.
2—Calender Dryers, bronze, 36" x 128", with frames, gears & necessary rolls to make up the unit.

EMBOSSING CALENDERS
1—3 roll 57" Embossing Calender
1—3 roll 51½" Smoothing Calender
1—2 roll 90" Smoothing Calender
1—43" 3-Roll Embossing Calender.
1—62" 2 roll Embosser.

EXTRACTOR ROLL
1—Extractor roll, 26" diameter x 104" face

FILTER
1—Dorr-Oliver Filter, 3 ft. dia. x 6 ft. face, stainless steel construction, with pump.

FLAT SCREENS
1—8 Plate "Packer"
1—12 Plate "Packer"

FRAMES
Beloit Heavy Duty Dryer Frames for 100 Dryers (42" Dia.) 4 Stack. Immediate Delivery.

HOGS
2—Mitts Merrill Type 15 C.F.

JORDANS
1—Jones Midget Jordan, s.s. fillings, with 40 h.p. motor and spare new fillings
1—Noble & Wood Monarch, Type D.

LABORATORY EQUIPMENT
1—20" Fourdrinier Wet End & Press Section
1—Bauer-McNett Fibre Classifier
1—Press Roll 6" diameter 24" Face, steam jacketted
1—2' Shartle Hydrapulper
2—8" x 8" Valley Sheet dryers
1—12" x 12" Valley Sheet dryer
1—6" diameter Hydraulic Press
1—Experimental Digester (High Pressure)
1—5 lb. Valley Beater.
1—15 lb. E. D. Jones Beater
1—8" x 8" Valley Hydraulic Press
1—Clark Softness & Stiffness Tester
1—Williams Freeness Tester, with Timer
1—10" Butterworth Padder.
1—Thwing Albert Tensile tester
1—Gurley Densometer Model 4110
1—20" Sprout Waldron Double Disc Refiner, A-F Bearing with motor.

LAMINATING MACHINES
1—52" face Waldron Laminating Head
2—84" Asphalt laminators.

MISCELLANEOUS
1—#1 Miami Selectrap

MOTORS
1—60 h.p. upright induction motor.
1—30 h.p. upright induction motor
1—200 HP General Electric Synchronous Motor and Starting Equipment (3/60/440, 360 RPM).
5—25 h.p. Westinghouse, totally enclosed, ball bearings, 705 r.p.m.
1—40 h.p. Westinghouse, totally enclosed, ball bearings, 880 r.p.m.

PRESS ROLLS
2—Chilled iron, chrome plated 9" x 72"
1—Chilled iron, chrome plated 12" x 100"
1—Chilled iron, chrome plated 10" x 74"
2—Presses consisting 2 Rubber & 2 Granite Rolls, each 20" diameter x 120" face.

PULPERS
3—Dyno-Pulpers

PUMPS
1—Economy Fan Pump, 6000 g.p.m., 20' head, 50 h.p. motor.
1—Morris-10,000 g.p.m. 25 ft. head (all bronze)

REELS
1—200" Beloit Pope Reel, 72" finished roll
1—86" 2 bowl reel.
1—84" 3 bowl revolving reel.
1—100" Rice Barton 2 bowl Reel, heavy duty.
1—123" 3 bowl Revolving Reel
1—134" 2 drum
1—72" Downingtown Reel, 2 bowl.

REFINERS
1—Dilts Classifiner, practically new
1—Rice Barton Dynofiner, details on request.
1—Dilts, #1 Hydrafiner, stainless steel filling, anti-friction bearings, excellent condition, including 125 h.p. motor
1—12" Wiener Refiner, with 200 h.p. motor
1—20" Sprout Waldron double disc refiner, A-F bearings with motor
1—double disc Bauer Refiner, with 2-150 h.p. motors
1—double disc Bauer Refiner, with 2-50 h.p. motors.

REGULATOR
1—Trimbey Consistency Regulator

ROLL GRINDER
1—36" Farrell Roll Grinder, 250" face

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
4—#2A Bird Rotary Screen, copper vats.
7—Trimbey, Senior Knotter Screens
1—#2A-50 Bird, copper vat
2—APMEW Rotary Pulp Screens.

SAVEALLS
1—LaMorte, 48" diameter x 82" face cylinder mold.
2—Savealls, cylinder molds, 42" diameter x 106" face, brand new vats.

SCREEN PLATES
Bird Rotary screen plates.

SHEETERS
1—132" Hamblet heavy duty duplex sheeter, anti-friction bearings throughout, including layboy and backstand.
1—84" Hamblet, duplex, back stands.

SHREDDER
1—16" "Swift" Paper Shredder

SLITTERS & WINDERS
1—32" Cameron Type 28-8-3, shear cut duplex, 30" rewind, constant tension and variable speed motor drive, practically new condition. Will lengthen up to 72" wide.
4—42" Cameron Type 6
1—42" Cameron Type 26-2A
3—50" Cameron Type 6
3—52" Cameron Type 9.
1—86" Two Drum Moore & White 50" diameter rewind.
1—96" 4 drum Moore & White winder
1—102" Cameron Type 18, 60" diameter
1—122" Cameron Type 18, 60" diameter, anti-friction bearings

SLITTING DEVICE
84" Quick change slitting device shear cut, complete, practically new.

STOCK PUMP
1—10 x 20 Shartle Triplex

STRAINER
1—Elliott Twin Strainer, Type R

SUCTION COUCH SHELL
1—Downingtown suction couch shell only, 127½" face 26" diameter

SUCTION COUCH ROLL
1—Beloit, 36" diameter x 246" face, SKF bearings.

SUCTION FELT ROLLS
1—Gilbert & Nash 122" face
1—Beloit Rubber Covered Suction Felt Roll 109 face x 20½" diameter.

SUCTION PRESS SHELL
1—14" diameter x 100" drilled face, suction Press Shell only.

SUPER CALENDER STACK
1—9 Roll 56"

TABLE ROLLS
22—Rubber Covered 10" diameter x 246" face
30—4" dia. x 130" face (will cut to size)

THICKENERS
2—Iron End Vats with 36" diameter x 84" face Cylinder Molds and 20" diameter couch rolls, including spare cylinder mold and spare couch roll, all anti friction bearing equipped.

TOILET WINDERS
2—72" Hudson-Sharp (Surface type winder)

TRIMMERS
1—84" Seybold
1—36" Oswego

VACUUM PUMPS
1—L-4 Nash Vacuum Pump.
1—H-3 Nash Vacuum Pump
1—#1 Nash Hytor vacuum pumps
1—#7 Nash Hytor vacuum pump with 75 h.p. synchronous motor.
2—Connersville, 14 x 20
2—#3 Nash Hytor
1—#4 Nash, with motor
3—L-5 Nash Vacuum Pumps

VATS
2—D. J. Murray Co. Vats, iron ends, for 42" x 120" cylinder molds, overflow and counterflow.
2—Brand new Downingtown Iron End Vats, copper lined, for 42" diameter x 112" face cylinder molds. Will cut down to your size.

VATS AND MOULDS
5—Stainless Steel Vats, with 36" Dia. x 100" Face Cylinder Moulds, anti-friction bearings, 2 Spare Cylinder Moulds, all in excellent condition.

VIBRATING SCREENS
1—Hummer electric Vibrating Screen, stainless steel
1—Selectro 2 stage, 5 ft. x 10 ft.
1—36" x 48" Vibrating Screen

WET MACHINES
1—72" Rogers Wet Machine.
1—84" Kamyr Complete Wet machine

WOOD SPLITTER
1—16" Horizontal

YANKEE DRYERS
1—84" diameter x 56" face.
1—12 ft. diameter x 181½" face

Paddy Ross, Pres. **J. J. ROSS COMPANY** Ben Kurs, Treas.
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Immediate Opening for Back Tenders and Stock Preparation Men

New Beloit Fourdrinier machine to be started up in near future. Products are machine coated food, board and specialty boards. Stock preparation men must have back tender and stock preparation experience. Top rates and excellent employee benefits afforded.

Submit resume, call or write:

Personnel Director

Gulf States Paper Corp.

Demopolis, Alabama

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TECHNICAL MANAGER

To administer plant technical services for large, integrated pulp and paper mill in southeast. Requires experience in either paper or chemical industries in quality control, supervision of analytical laboratory, process engineering, technical sales service or research and development. Salary open. Reply in confidence giving complete history of education and experience. Our people know of this opening.

Box #59-191

care Paper Trade Journal.

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EXCELLENT OPPORTUNITY FOR

Technically trained man for market development of specialty and technical papers, and for coordinating New Product Development Program. Sales experience preferred but not necessary. Technical background should be in pulp and paper, or allied industry. Must have ability to carry out contacts at all organizational levels.

Send resume to: Personnel Department

P. H. GLATFELTER CO.

Spring Grove, Pa.
Phone—Spring Grove 3216

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Help Wanted

ENGINEERS

CHEMICAL AND MECHANICAL

We have openings for young Chemical and Mechanical Engineers in our Technical and Engineering Departments. These men should have from 2 to 5 years experience in the pulp and paper industry. These are good opportunities for professional growth with an expanding concern. Salary commensurate with experience.

Personnel Department
Riegel Paper Corporation
Carolina Division
Acme, North Carolina

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SALES APPLICATION ENGINEER WANTED—For Sales Department of converting machinery builder in New York State. Prefer mechanical engineering background. Varied, interesting, and growing product line in paper, film and foil machinery. Offers excellent growth opportunity. Reply to: W. D. Haskell, Sales Manager, The Black-Clawson Company, Dilts Division, Fulton, New York. J-13

WANTED—TOUR BOSS for two machine high grade folding box board mill in New England Area. Age 30-45. Address Box 59-193 care Paper Trade Journal. J-10

Situations Wanted

EXECUTIVE - WORK MANAGER

—in manufacture of boards & papers; their conversion; and film. Wishes change for challenging opportunity. Successful record in production; organization; labor relations, & development. Address Box 59-137 care Paper Trade Journal. J-29

MECHANICAL ENGINEER

Graduate Engineer, age 33, experienced in design of wood chippers, splitters, barkers and flaking machines seeks challenging opportunity with machinery manufacturer. Address Box 59-190 care of Paper Trade Journal. J-6

FORESTER AVAILABLE — Graduate West Virginia University. Age 26. Veteran, single, experience U. S. Forest Service, Washington and Oregon. Address Box 59-183 care Paper Trade Journal. J-22

MASTER MECHANIC—Experienced 25 years in specialty bleached kraft pulp, paper, tissue, newsprint, construction and maintenance supervision. Prefer South or West. Address Box 59-182 care Paper Trade Journal. J-22

For Sale

1—Good 48" Hamblet Single Sheeter with slitting attachment, layboy, 12 roll double deck backstand and A.C. 3 phase, 60 cycle, 220 volt variable speed drive. Gibbs-Brower Company, Inc., 10 Depot Plaza, White Plains, New York. J-22

For Sale

FOR SALE

50 HP RELIANCE VS DRIVE

1—Type T Explosion Proof DC Motor 50 HP, 850-1200 RPM, 230 V

1—Trumbull Type RBA Enc. Switch

1—Reliance VS Drive Rheostat W/ Speed Control, D.C. Voltmeter, Speed Indicator, D.C. Ammeter, Push Button Controls

1—GE 50 HP Starting Comp.

5—Fuse & Circuit Breaker Boxes

1—Reliance Control Cabinet W/AC Adjustable Speed Power Unit 220/440 V, 3Ph, 60 Cy., Model 50A3 and 1—Reliance DC Generator Model 230D3 Mounted Inside

1—Michigan Right Angle enclosed Reduction Unit 10.1 to 1 Ratio

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1—Farrell Roll Grinder, 30" Diameter x 130" Face. Complete. Excellent Condition.

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FOR SALE

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LOCATED—PHILADELPHIA, PA.

1—90" Yankee Fourdrinier Machine. Equipped with Suction Press, Head Box, Voight Inlet.

1—6 Ft. Luken Steel Yankee Dryer—150# Test.

1—5 Ft. Moore & White Yankee Dryer. The above two dryers are fully equipped with doctors, Honeywell speed indicators and air cylinders with Foxboro controls. All rolls (felt & wire) equipped with A.F. Bearings. Direct Motor Drives. Excellent Condition.

2—Collators.

1—#1 Clafin Refiner.

1—75 KW MG Set with Controls.

2—Embossers.

3—Beaters.

2—Savealls.

Many other items, including pumps, motors, laboratory equipment, etc.

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For Sale | *For Sale* | *For Sale*

150 TON MILL FOR SALE

3—SINGLE CYLINDER PAPER MACHINES EACH PRODUCING 50 TONS ROOFING—SHUT DOWN MAY 15, 1959

#1 machine—cylinder 48" Dia. x 86" Face—Soft Rubber Couch—Suction Roll—14½" Dia. with Brass Top Roll—2 Main Presses—50 Dryers—36" x 84"—Vickery Dr. Blades—Small Calender Stack—2 Drum Upright Reel Drives—Bird #2 screens—Fan Pump—Line Shaft—75 HP—MG Set—Controls.

#2 machine same as #1 except 42" Dia. cylinder.

#3 machine same as #1 Paper Machine.

11—Rag Beaters—600# Capacity with 75 HP Splash Proof Motors.

1—1000# Broke Beater with motor.

1—Miami #1 Jordan with Synchronous Motor and Controls.

1—Bull-Dog Jordan with motor.

Wide selection of pumps—Motors—10 Knife Cartage 47" Slab Chipper—with Anti-Friction bearings—60 HP Motor—Controls—Chip Blower.

Will sell paper machines separately

6—New Code Black-Clawson Dryers—36" x 84"—Never installed.

Full selection spare parts.

Machinery Located Barrett Division—Elizabeth, New Jersey

***Contact:* Charles J. DiCarlo**

UNITED PAPER MACHINERY CORPORATION

Lockport, New York

Telephone Lockport 4-8862

FOR SALE

1—Complete 2 cylinder Rice Barton Wet End—48" diameter Cylinder Molds—128" trimmed—with couch rolls, suction roll, 3 primary presses, 3 main presses (one of the main presses anti-friction bearing equipped, 28" diameter rolls hydraulically operated)—including all felt equipment.

Still in operation for inspection purposes. Will be removed July 1, 1959.

J. J. ROSS COMPANY

377 Frelinghuysen Ave. **Newark 12, N. J.**

Tel: Bigelow 3-3720

J-22

AVAILABLE

Two to three hundred tons of monthly capacity available in mid-west board mill. Address reply to Box 59-158 care Paper Trade Journal. J-22

Wanted

WANTED

Second Hand Cylinder Board Machine for Export

To make up to .30 liner board and chipboard, minimum trim 84", capacity 30 to 50 tons per day. Write Box 59-188 care Paper Trade Journal. J-22

LANGSTON—DUPLEX—PREHEATER

WITH 2 CYLINDERS, 36" DIA., 78" FACE. PRACTICALLY NEW — IMMEDIATE DELIVERY

ADDRESS BOX 59-189 CARE PAPER TRADE JOURNAL. J-22

Wanted

WANTED

One Late Model S.O.S. Grocery bag machine. Must make range of at least 2 to 4# bags or 3 to 5# bags. For sale out of U.S.A. Please submit all pertinent information in first letter including price & Production. Address Box 59-177 care Paper Trade Journal. J-29

WANTED—High speed slitter 50 to 54" in width for converting adding machine and teletype rolls. Send replies to Box 59-192 care Paper Trade Journal. J-22

BUY
U. S. SAVINGS BONDS

For Sale Complete Mill, Syracuse, N. Y. area 62" Trim Fourdrinier machine. 15 to 20 tons of .009 corrugating medium or light weight chip per day. For full particulars contact Box 59-176 c/o Paper Trade Journal.

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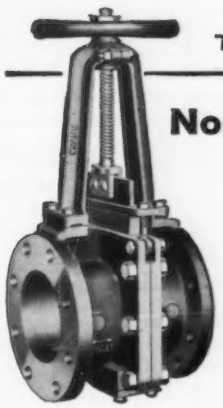
FOR SALE

1—42" Trim Hudson Sharp No. 10-T Rotary Type Paper Towel Interfolder for 4-10" Wide Towels, 10-5/8" Cut-off. New, in original shipping crate. Further Details on request. Write Box 59-179, care Paper Trade Journal. J-29

FIGHT CANCER WITH A CHECKUP AND A CHECK



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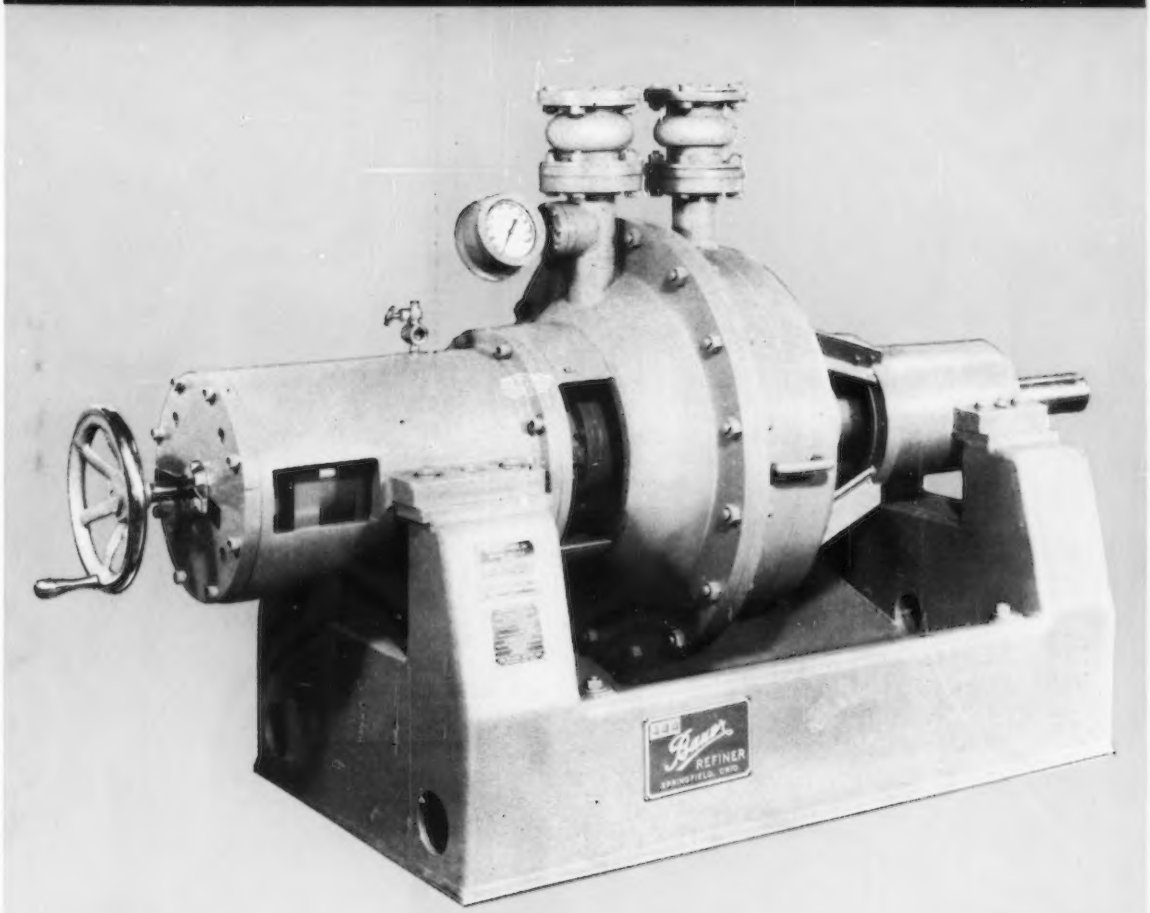

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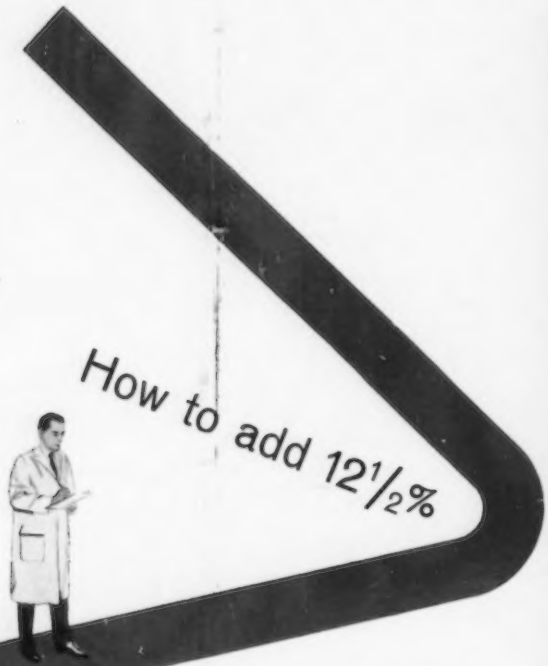

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